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Interim Guidance for Preparing
Environmental Impact Statements

August 1978

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INTERIM GUIDANCE

Suggestions for Preparing Environmental Statements

PREFACE

Interim Guidance has been prepared to assist Bureau of Land Management (BLM) personnel involved in environmental statement (ES) preparation. The content begins with the decision to prepare an ES and the assignment of lead Bureau and responsible officials. Since Department of the Interior coordination of these aspects will have taken place, only subsequent processes will be discussed.

In this document, hints and suggestions are offered for preparing ESs and, in most cases, elaborates on guidance found in the body of BLM Manual 1792. Where items relate directly to a specific manual section, references to the appropriate sections have been provided. Detailed information is not provided on how to prepare the technical input for each environmental element of concern (i.e., soils, air quality, etc.); the individual resource staffs are responsible for that particular part of BLM's program. This document will, however, address the synthesis (or combination) of these separate program concerns. Furthermore, detailed coverage will not be supplied on the procedures which are unique to a particular type of ES (e.g., those applicable only to a range statement). Pertinent differences will be identified when feasible.

This guidance is primarily intended for use when BLM is in a lead-Bureau role, but it can be utilized when BLM is a participating Bureau. It may also benefit other agencies, bureaus, offices and industry cooperating with BLM in an ES effort. The ideas presented are applicable to most types of ES team situations.

The format used in this document is the same as that suggested for use in Bureau of Land Management Environmental Statements.

SECTION 1

PARTICIPANT ROLES

LEAD AND PARTICIPATING AGENCIES, BUREAUS, AND OFFICES

Most actions requiring an environmental statement (ES) involve more than one bureau or office. However, the Department of the Interior has generally ruled that the bureau or office responsible for the first significant federal action or decision takes the lead. The process by which lead bureaus are selected is detailed in manual section 1792.21. The lead bureau or office is the one assigned the coordination and management responsibility for preparing the environmental statement. For the purposes of the Interim Guidance, THE LEAD BUREAU IS ASSUMED TO BE THE BUREAU OF LAND MANAGEMENT (BLM). Participating "agencies" are federal agencies, bureaus, and offices with parallel or related federal decision-making responsibilities affecting the proposed action. Chapter 1 of the ES describes the actions of these agencies, bureaus, and offices. (See 1792.44Elb(2).) The definition of a participating agency does not include those agencies, bureaus, and offices with special expertise or broad regulatory responsibilities with whom BLM must consult. For example, the Environmental Protection Agency (EPA) must be consulted for air, water, and noise standards, but it is not a participating agency when no decisionmaking responsibility is involved.

Lead Bureau

In many instances the lead bureau has both a leadership and management role. The lead bureau assumes the responsibility for determining format, standards, schedule, deadlines, project manager, procedures, number of people needed, skills needed, and cutoff dates for data submissions. The lead bureau also has complete freedom to determine the format in which material is presented and to edit text submitted. The extent to which these lead responsibilities are assumed depends greatly on the scope and deadline of ES preparation. A short preparation time usually hinders full participation by all agencies, bureaus, and offices involved. The preparation plan (see 1792.3) is the tool used to document ES preparation arrangements and to coordinate them with other agencies, bureaus, and offices.

Upon approval of the preparation plan, it is suggested that a 1-day meeting with all agencies, bureaus, and offices be held to define the roles and assignments of each. This meeting should not be convened until the lead bureau is ready to make definite job assignments.

A notification letter can be sent to all participating agencies, bureaus, and offices as soon as an orientation meeting is arranged. Items normally included in the letter are: (1) who is lead bureau and why, (2) which agencies, bureaus, and offices will be responsible for various statement topics, (3) ES scope, (4) organization of statement

preparation team, (5) dates of coordination meetings, (6) types of representatives who should attend, (7) what information and materials to bring, (8) who to contact for further information, and (9) how review comments and sign-off procedures of nonlead agencies and bureaus will be handled.

During the meeting the lead bureau discusses the preliminary agreement reached with the participating agencies so that all have a common understanding of the approach to be followed. Any additional problems which were not covered in the preliminary agreement should be identified for resolution by the affected agency heads. The coordination and management procedures to be exercised by the lead bureau should be discussed and clarified so that all involved in the effort have a common understanding of the entire process.

The lead bureau is responsible for identifying, contacting, and establishing liaison with all federal agencies that have regulatory, permitting, and licensing authorities. It also determines which federal "agencies", other than participating agencies, bureaus, and offices, need to be contacted in the consultation and coordination process. Appendix 2 of the Council on Environmental Quality (CEQ) Guidelines is utilized to determine agencies which are to be contacted, as well as the coordination requirements established by such acts as the Historic Preservation Act, Endangered Species Act, Department of Transportation Act, and Fish and Wildlife Coordination Act. The lead bureau needs to find out what applicable data are available from all agencies which should be contacted pursuant to law. It must also establish formats for requesting such data.

The lead bureau is also responsible for contacting and establishing liaison with all state and local regulatory and permit authorities. Required contacts are state clearinghouses, departments of natural resources, health departments, planning and zoning departments, state historical officers, and county officials. If possible, the lead bureau should work through the appropriate state director's office or district manager in making initial contacts with state and local governments, agencies, and special interest groups.

Participating Agencies, Bureaus, and Offices

Participating agencies, bureaus, and offices and their representatives on the ES team have obligations and responsibilities to the lead bureau. Therefore, all ties to the parent agency, bureau, or office should be limited to periodic status reports. Team members' loyalties ought to be to the immediate project. When the parent agency, bureau, or office is unwilling to allow members to detach, conflicts arise because of the double supervision. When this occurs, team members begin to lose effectiveness in their supporting role.

This problem can be compounded even further if a team member must gain clearance with the parent agency, bureau, or office prior to providing the data to the lead bureau. Obtaining clearance causes delay and makes it difficult for the lead bureau to require rewrites from the team members involved.

For these reasons the roles of participating agency, bureau, or office teams are to be clearly defined from the very beginning by the lead bureau. "Detached roles" must be agreed upon and followed. In addition, it is best that no team member be changed during the process except for extreme personal reasons or for serious inefficiency which hampers the entire team's effort. It is the responsibility of the lead bureau as well as all participating agency, bureau, and office heads to make sure that the aforementioned, and agreed upon, guidelines are followed.

The lead bureau must realize that team members from participating agencies, bureaus, and offices seldom, if ever, have approval or sign-off authority for their organization. Participating team members are only involved in parts of the total ES process and do not see the whole product. The lead bureau as well as the other agencies, bureaus, and offices involved must remember that assigning participating team members does not relieve the agencies of their responsibility to review and approve the entire ES. Consultation and coordination with the headquarters office of these other agencies and bureaus will still be required in preparation of the draft environmental statement (DES) and in the formal review process.

OTHER AGENCIES, BUREAUS, AND OFFICES

Other agency, bureau, and offices' responsibilities and roles in an ES effort are to: (1) Provide liaison with the ES team for data gathering purposes, (2) provide requested data in a timely manner, (3) provide guidance to the ES team on requirements which must be met to satisfy jurisdictional responsibilities, (4) review and provide comments on draft materials and the draft ES to meet established deadlines, (5) review and commit mitigation measures within their jurisdiction, and (6) review and provide comments on drafts of the preliminary final environmental statement (PFES).

STATE AND LOCAL GOVERNMENT AGENCIES AND GROUPS

The roles of state and local government agencies and groups are similar to those of other agencies, bureaus, and offices except that the focus of their concern is state and local issues. They provide liaison and contact points for the ES team, establish procedures for reviewing draft materials, review and commit mitigating measures within their jurisdiction, and provide comments on the draft DES. It is most important to insure that all state agencies and individual offices are aware of the ES effort and to obtain their cooperation with the ES team.

This can be accomplished when the ES is first assigned to the lead bureau so that contact procedures have been established prior to arrival of the writing team.

APPLICANT

The role of the applicant is critical in meeting established deadlines. It is essential that the applicant provide a complete, detailed description of the proposal, which provides a basis for identifying and assessing anticipated impacts before the ES team is assembled. The applicant needs to be made aware that, until sufficient technical data has been submitted, preparation of the ES cannot begin. Applicant requirements are spelled out in manual section 1792.41. For ESs covering Bureau of Land Management motion actions, BLM becomes the "applicant." When this occurs, the responsible BLM office has to meet requirements as does any applicant. (See 1792.42.)

Prior to completing the original application, it is wise for the applicant to work with the responsible agency, bureau, or office to determine needs, criteria, and format for submission of proposal data. The applicant is responsible for: Providing data on any studies already prepared, identifying studies underway, providing new data as soon as it becomes available, providing a detailed description of applicant committed mitigation measures, and providing data and assessments on any alternatives which have been considered.

The applicant needs to provide liaison for the ES team, meet early with the team to describe the proposal, provide a field tour of the site, and be willing to provide continuing support in terms of sketches, diagrams, photographs of similar operations, etc.

For a bureau motion ES, the district office where the action is occurring is responsible for providing the necessary data for the ES located in the district. The district office is responsible for completing or updating the various planning documents (e.g., Unit Resource Analyses (URAs), Management Framework Plans (MFPs), and Implementation Plans such as Allotment Management Plans (AMPs)) to acceptable standards before initiation of work by the ES team. Prior to and during development of the various planning documents, it is suggested that a checklist and/or summary tables be developed to assist in the preparation of Chapter 1 of the ES. A suggested checklist for a range ES is shown as Example 1-1. Data of similar specificity would also be required for any type of bureau motion (e.g., forest management proposals or range management proposals) at the implementation plan level.

EXAMPLE 1-1

SUGGESTED CHECKLIST FOR DEVELOPMENT OF RANGE ES CHAPTER 1
(Preferably developed by the AMP Team)

1. Include land acreage by allotment, pasture, public lands, state, private, etc. Acreages provided must agree with those stated in the URA and other planning documents.
2. Establish short-term and long-term time frame.
3. Provide summarized description of each grazing treatment.
4. Include acres of each grazing treatment, by year, for each grazing cycle.
5. Describe proposed use by allotment and pasture: grazing system, class of stock, season of use, livestock animal unit months (AUMs), wildlife and wild horse AUMs, etc.
6. Include tabulation, by allotment, of the specific quantified management objectives proposed in AMPs.
7. Provide summary listing of quantified overall objectives of the entire proposal.
8. Include a summary of the benefit/cost ratios of the AMPs to be implemented. (See W.O. instruction memo 77-84.)
9. For "non-AMP areas", list pastures, acres and land status, AUMs, class of stock, season of use, grazing system, etc.
10. Provide a complete description of areas where there will be no grazing. (The same kind of information needed to describe the proposed action and custodial management is needed here.)
11. Provide a complete implementation schedule.
12. Include a map of entire ES area identifying pasture rotation sequences by allotment, range improvements to be implemented by year, and grazing treatment applied for each cycle.
13. Describe method of handling trespass.

14. Describe range improvements and vegetative manipulation projects which would have significant impacts. A tabular listing of numbers by types and allotments may be sufficient in those cases where significant impacts are not expected to occur.
 - a. Water developments by allotment and total number of each different type, size, construction procedures, fenced or unfenced, number of feet of pipelines, number and size of stock tanks, access road or trail, and miles of new roads necessary for access and rehabilitation measures.
 - b. Fences by allotment, type, construction, specification, number of cattleguards and gates, any fence removal or modification, etc. Total miles of fence by allotment for the entire ES area. Distinction needs to be made between allotments so that continuous miles of boundary fence are not duplicated for adjacent allotments.
 - c. Complete description and acreages for all proposed vegetative manipulation projects (e.g., chaining, seeding, burning).
 - d. Manpower requirements for construction and/or implementation.
15. Include a map showing location of all improvements and projects.
16. Describe interrelationships between the proposal and the MFP recommendations and objectives.
17. Document all coordination with federal and state agencies, livestock user groups, and the public during AMP development.
18. Document the interrelationships between grazing operations, other agencies and groups.
19. Document the reasons for selecting the management systems and the relationship with the stated objectives.

SECTION 2

PREPARATION PHASES

There are at least 6 major phases and 28 stages involved in the completion of an environmental statement (ES). (See 1792, Illustration 9, Page 1.) Each phase and stage is a preparation for the one following. Some stages involve mandatory actions (e.g., formal review periods) which, if omitted, could cause the ES to be judged inadequate due to procedural error.

The process flow diagram (see 1792, Illustration 9, page 2) illustrates the many organizational levels (other than the team level) that become involved in ES preparation. It is useful for determining the time required to complete each action.

Within the total ES process there are normally nine quality assistance input points. (See 1792, Appendix 1.) The purpose of this input is to assure that the ES team is provided with help throughout the process, especially in the early stages, and that the documents produced are of adequate quality.

The purpose of this section is to discuss two items--actions prior to team organization and actions subsequent to team organization--and to provide some detail of scheduling.

ACTIONS PRIOR TO TEAM ORGANIZATION

Decision to Prepare an ES

BLM manual section 1792.2 describes the documentation, consultation, and approval necessary to determine that an ES is to be prepared. The decision to prepare an ES is provided to the responsible official. This triggers the series of steps involved in preparing an ES.

Selection of Project Manager and Team Leader

The responsible official, having received notification of approval to do an ES, designates, at a minimum, a project manager or a team leader, and a technical coordinator. These positions are critical and should be filled by the same people throughout the entire project.

A project manager is designated when there is more than one ES being prepared. Team leaders for each prospective ES would be designated and would report to the project manager who would be responsible for overall management of the various ESs. A team leader would be responsible for preparation of each specific ES. When there is only one ES being prepared, a project manager would not normally be necessary because the team leader would then be responsible for the preparation and management of the ES.

Administrative Arrangement

The responsible official should make advance arrangements for office space and equipment. Personnel recruitment plans should be initiated as soon as possible in order to insure recruitment completion prior to the scheduled ES training.

Technical Review of the Proposed Action

The first task of the project manager is to assemble a small group of specialists who are familiar with ES requirements and the technical aspects of the action to review the proposal. (See 1792.41A.) The composition of this review team depends on the type of proposal. Members may or may not become part of the ES team. The first evaluation of the proposal has to be to determine if the proposal is consistent with the land use plan for the area, if such a plan is available. Criteria for this determination is provided in the Draft Inventory and Planning Regulations. The second purpose of the technical review is to determine if the proposal is adequate and provides a complete, detailed base from which to prepare the ES. Making sure the ES team is provided a final, complete, and technically adequate proposal helps to avoid costly false starts. The ES team has to have an adequate description of the proposed action on which to base its assessment and should not have to waste time trying to obtain data from the applicant, or the bureau office that developed the proposed action.

The following guidelines should be followed to insure development of an adequate Chapter 1.

1. All discrete operations of each project component should be identified as to who carries them out and how they are to be carried out.
2. The size (scale) of environmental changes proposed should be quantified.
3. The time of (season of) year for implementation should be identified.
4. The exact location and time schedule of project proposal and components should be identified.
5. The time required for implementation.
6. The project life.

If the technical review of the applicant's proposal surfaces inadequacies, the responsible official should inform the applicant, in writing, of the specific data needed to fill the gaps. The applicant should also be told that work on the statement cannot proceed until the

changes, corrections, or additions are made. Formal ES deadlines and schedules cannot be firmly set until an adequate and detailed proposal is in hand.

If the technical review of a BLM proposal indicates inadequacies, the project manager or team leader should be informed. If the team is not located in a district office, then the project manager or team leader will go back to the appropriate district manager for information. If the team is located in a district, the project manager or team leader would go back to the planning team that developed the proposal.

Where the planning and ES team are one-and-the-same, then consideration should be given to utilizing a disinterested (third party) to review the proposed action prior to developing the ES part of the process. This role could be carried out by the district or state office environmental coordinator. In any case, the person utilized should be completely familiar with ES preparation processes and requirements.

Preparation Plan

Once a firm, technically adequate proposal is in hand, the project manager and team leader develop the statement preparation plan as detailed in BLM manual section 1792.3. This plan is the strategy for preparing that particular ES and includes the following parts: (1) Purpose of the Action, (2) Statement Level, (3) Scope of the Statement, (4) Organizational Level, (5) Statement Arrangements, and (6) Preparation Schedule. Specific components of each part are described in manual section 1792, Illustration 1.

Scheduling Methods

Several methods may be used singularly or in combination depending on the complexity of the project. The project manager and team leader select the ones appropriate to the specific project at hand. One approach to scheduling is the milestone or event schedule. (See Example 2-1.) To provide continuity, dates on the event schedule should be keyed to page 1 of Illustration 9 of 1792.

On complex ESs, the Program Evaluation and Review Technique (PERT) is a useful way to identify the time required for actions to occur. A reference which would provide some general guidance on the PERT process is: Management Systems by Peter T. Schoderbek, published by John Wiley and Sons, New York. Using this approach, ES events are diagrammed in a series in which the actions are expected to occur. Concurrent actions are displayed. Time estimates are made considering the expected elapsed time between events, earliest expected starting time, and latest allowable time for completion of the document on schedule. A critical path is developed representing the shortest amount of time required to complete the effort. Programmed instruction texts can be obtained that

describe the PERT process. The process can be modified and simplified to meet individual needs. However, page 2 of Illustration 9 of 1792 may be used.

The team leader, however, needs a more specific and precise document for internal use--a document that assigns accountability for each section and subsection of the ES. This may be accomplished in several ways. A chart showing outline sections and responsibilities could be utilized. (See Example 2-2.) This method provides an overall visual portrayal of the pieces, who is responsible for each piece, and the due dates.

The team leader should also consider using a staggered schedule. (See Example 2-3.) Using a staggered schedule, various assignments for critical environmental elements (e.g., vegetation and soils involved in first order impacts) are prepared first. Preparation of these sections would identify the effects for these critical elements which would determine impacts for other environmental elements.

In order to determine when team members should complete their assignments, a daily schedule may be necessary. (See Example 2-4.) Often, until each day is laid out, the team leader and team members do not realize how little time is really available to them. If a daily schedule is prepared, the team leader can judge the number of days straight the team needs to work, the number of hours per day, etc. The effect of time off and holiday time on time available has to be considered. Often these items are neglected when only a milestone or key event schedule is prepared. Once the daily schedule is developed, key dates, important for the internal working of the team, can be summarized as shown in Example 2-3.

How the schedule is developed depends on the time frame for completing the ES. If the Department gives the bureau a specific ambitious date for completing the final environmental statement (FES) and submittal to the Environmental Protection Agency (EPA), the schedule is developed backward from that date. However, the project manager and/or team leader should also submit a schedule showing the estimated time they feel is needed for completion of a "best effort" ES. For those ESs where the schedule is determined by the bureau, sufficient time should be scheduled to allow for quality control and incorporation of review comments into the preliminary draft environmental statement (PDES), the draft environmental statement (DES), and the preliminary final environmental statement (PFES). The schedule should reflect concurrent Washington Office management and Division of Environmental Assistance review periods of 3 weeks for the PDES and DES and 2 weeks for the PFES. Sufficient time should be allowed following the review periods to allow the team members to respond to the review comments and revise the ES accordingly.

The time allotted each stage depends in a large part on the priority assigned to the ES. The number of other agencies, bureaus, and

offices directly involved, the scope of the statement, and their review processes have to be considered in developing a schedule.

Review and Approval

Statement preparation plans are submitted for review and approval to the Director of BLM through the Division of Environmental Assistance. (See 1792.32.) After review and approval the plan is transmitted to the responsible official. At this point he now has the authority to proceed in preparing the ES in accordance with the preparation plan.

Public Announcement of the ES

After approval of the preparation plan, the responsible official announces his intent to prepare an environmental statement. (See 1792.71.) The announcement is made in a news release. This stage is important for the team because it identifies people who can provide input to the ES. A record of responses to the news release should be maintained by the public involvement coordinator and discussed with all team members.

ACTIONS SUBSEQUENT TO TEAM ORGANIZATION

During Formal Organization of Team and During Training on Assessment and ES Preparation Techniques

After the plan has been approved, but not before office arrangements have been settled, the ES team can be assembled. The first week that the team is together is crucial to the success of the project. A good orientation to what the project is about and the procedures to be followed are essential if a false start and future misunderstandings are to be avoided.

The first week can be spent becoming familiar with the project and with available data. The orientation usually includes meetings with the applicant (or, for bureau motion statements, the authors of the applicable planning documents), with other participating agencies, and interested groups. Training in ES procedures also should be a part of this first week. (See 1792, Appendix 1.)

Chapter 1 of the ES, along with the preparation plan, should be furnished to the team members either during the first week or before the ES training. The team members need to read the preparation plan, discuss it as a team, and resolve problems. The authors also need to examine their sections of the outline and expand them to the degree necessary. A field trip (or trips) should be scheduled to familiarize the team with the site. Trips to the site can extend into the second week.

It is essential that, by the end of the orientation period, each team member understand his precise role on the team, the task which has to be done, and how he is going to accomplish the job in front of him. Other sections of the Interim Guidance provide specifics for each phase of ES preparation, and every team member needs a copy of this document as well as copies of BLM Manual 1791 and 1792. Team roles can be developed through discussion with the team leader or project manager and by means of a handout or guidebook describing specifically what each team member's responsibilities are.

During Data Collection and Assessment

The team will need to split up and obtain data for their specialties from any available sources. Data acquired by the team needs to be placed in the ES library where it can be cataloged and charged out to any individual needing it. With good control measures, all team members can have access to any library materials they need.

During the assessment process the team leader and technical coordinator need to monitor the schedule closely and review the drafts submitted by each team member. It is not until this time that the team leader will know if the team really understands the process and has utilized a truly interdisciplinary approach to the assessment. Inconsistencies will surface when data coverage among sections is compared. The technical coordinator will need to devote time and attention to insuring the data's technical adequacy. After the team leader is assured that the team has the data needed and has made the proper assessment, the writing begins. The editor must merge the individual sections into a single cohesive document or into two coordinated documents if the ES is prepared as part of the BLM planning process, but not physically merged with the plan. It is suggested that the document receive a team review and be presented for review as the team's and the responsible official's best effort.

During Review of PDES

The preliminary draft environmental statement receives an in-depth intensive review by nonteam personnel. The review is coordinated by the Washington Office management staff and would involve the Washington Office Division of Environmental Assistance. During this time span, the team may continue to collect additional data, if needed, or take a break from its duties. The PDES should meet the following minimum standards in order to insure a constructive, high quality review.

1. The basic guidance and format provided by 1792 and the Interim Guidance has been followed.
2. All material is readable, edited, and typed or legibly printed.

3. All parts of the document are there; all sections are coordinated. (See 1792.44.)
4. All maps are contained in the PDES and are readable.
5. All appendices and backup material cited as available upon request are there for review.
6. A complete table of contents is available and all pages are correctly numbered.
7. All contractor input has been edited and is in the proper ES context and format.
8. Review copies are unbound, double spaced, and copied on one side only.
9. Reference citations in the text and the reference list are complete.

Preparation of DES

After the PDES has been reviewed, a set of consolidated comments will be returned to the responsible official. At the option of the responsible official, the reviewers may present the comments in person to the project manager, team leader, and technical coordinator. This allows for an explanation and clarification of any unclear comments. The team then utilizes the comments to prepare the draft ES. The same team members use the internal work flow procedures employed for the PDES to prepare the DES.

Review of DES

The DES is reviewed as was the PDES. If previous deficiencies have been corrected, the document is transmitted through the designated Washington management staff to the Department of the Interior for review as the Bureau of Land Management's "best effort." Departmental comments are then transmitted to the project manager through the Washington Office management staff and the team incorporates them into the DES prior to printing, filing with EPA, and public release.

Public Hearings

On major ESSs, public hearings are normally held. The procedures involved are described elsewhere in this document.

Preparation of PFES

Once the public comment period is over, all comments have to be evaluated and the DES revised to accommodate the substantive comments and to answer all comments. This process is described elsewhere in the Interim Guidance.

Review of PFES

The review process for the preliminary final environmental statement is the same as for the PDES.

Preparation of FES

Same procedure as for the DES.

Release of FES

Upon clearance by the Department of the Interior or as delegated to BLM, the FES is cleared for release to the public and EPA.

EXAMPLE 2-1

SAMPLE MILEPOST SCHEDULE
(Range ES)

<u>Action Item</u>	<u>Start</u>	<u>End</u>	<u>Time Allowed</u>
Write Chapter 1	Aug. 1, 77	Aug. 15, 77	2 weeks
Preliminary Impact Assessment	Aug. 15, 77	Aug. 22, 77	1 week
Write Chapter 2	Aug. 22, 77	Sept. 12, 77	3 weeks
Complete Impact Assessment	Sept. 12, 77	Oct. 10, 77	5 weeks
Write Chapter 3	Oct. 10, 77	Nov. 1, 77	2 weeks
Review and Rewrite Chap. 2	Nov. 1, 77	Nov. 7, 77	1 week
Write Draft Chapter 4	Nov. 7, 77	Nov. 14, 77	1 week
Commitment of Mitigation	Nov. 14, 77	Nov. 21, 77	1 week
Complete Chapter 4	Nov. 21, 77	Nov. 28, 77	1 week
Write Chapter 5	Nov. 28, 77	Dec. 5, 77	1 week
Desc. of Alternatives	Dec. 5, 77	Dec. 19, 77	2 weeks
Assessment/Alt. Impacts	Dec. 19, 77	Jan. 9, 78	4 weeks
Complete Chapter 8	Jan. 9, 78	Jan. 23, 78	3 weeks
Write Chapters 6 and 7	Jan. 23, 78	Jan. 30, 78	1 week
Write Chapter 9	Jan. 23, 78	Jan. 30, 78	1 week
Assemble and Complete Appendices and Backup Material	Jan. 30, 78	Feb. 13, 78	2 weeks
Final Typing and Reproduction of the PDES	Jan. 30, 78	Feb. 24, 78	4 weeks
PDES Review	Feb. 27, 78	Mar. 20, 78	3 weeks
Revision of PDES	Mar. 20, 78	Apr. 10, 78	3 weeks
Review of DES	Apr. 10, 78	Apr. 24, 78	2 weeks
Revision of DES	Apr. 24, 78	May 1, 78	1 week
OEPR Review of DES	May 1, 78	May 15, 78	2 weeks
Revision of DES and Preparation for Printing	May 15, 78	May 29, 78	2 weeks
Printing of DES	May 29, 78	July 3, 78	5 weeks
Clearance and File with EPA	July 3, 78	July 7, 78	1 week
Public Review	July 17, 78	Aug. 21, 78	6 weeks
Public Hearing	Aug. 7, 78	-	
Analyze Comments	Aug. 21, 78	Sept. 1, 78	2 weeks
Prepare PFES	Sept. 1, 78	Sept. 15, 78	2 weeks
Review PFES	Sept. 18, 78	Oct. 2, 78	2 weeks
Prepare FES	Oct. 2, 78	Oct. 16, 78	2 weeks
Review FES	Oct. 16, 78	Oct. 30, 78	2 weeks
Revise FES	Oct. 30, 78	Nov. 10, 78	2 weeks
OEPR Review and Clearance	Nov. 10, 78	Nov. 24, 78	2 weeks
Print FES	Nov. 24, 78	Dec. 22, 78	4 weeks
Clearance and File with EPA	Dec. 22, 78	Jan. 5, 79	2 weeks

EXAMPLE 2-2

SAMPLE OF OUTLINE ASSIGNMENTS

II. DESCRIPTION OF THE ENVIRONMENT

A. Existing Environment

(Describe the environment as it exists today, prior to implementation of the proposed action. Specify the initial areas of concern for each major environmental element likely to be impacted.)

1. Climate (temperature, precipitation, limitations, etc.) (Miller)
2. Air quality (air movement, present air quality, limitations, etc.) (Miller)
3. Geologic setting (Describe only those factors which limit the proposal and relate to impacts or to factors which have influenced other environmental components being impacted. Include separate subheads on rare and unique geologic phenomena, paleontological resources, and other geologic resources of scientific, educational, or heritage value.) (Moore)
4. Topography (landforms, slope drainage, gradients, limitations, etc.) (Moore)
5. Soils (types, characteristics, limitations, etc.) (Dean)
6. Water resources (quality, use, rights, limitations, etc.) (Green)
7. Vegetation (aquatic, riparian, terrestrial, types, species, trends, unique/threatened/endangered, etc.) (Brown)
8. Animals (aquatic, terrestrial, endangered and threatened species covered under separate subhead, other unique zoologic phenomena of scientific, educational, or heritage value.) (Smith)
9. Cultural resources (Laudeman)
10. Visual resources (Landscape Architect)

11. Wilderness values (Jackson)
12. Sound (acoustics) (Miller)
13. Recreation resources (values, existing sites and uses, include hunting, fishing, etc.) (Landscape Architect)
14. Agriculture
 - a. Livestock grazing (authorized use, type of use, number, dependence, operation, etc.) (Ligon)
 - b. Farming (Discuss in general for entire area.) (Ligon)
15. Forest resources (Discuss in general for entire area.) (Ligon)
16. Mineral resources (resource base and use) (Moore)
17. Land use plans, controls, and constraints (Miller)
18. Transportation networks (existing types, uses, etc.) (Miller)
19. Socio-economic conditions (Miller)
 - a. Populations
 - b. Employment
 - c. Income
 - d. Attitudes and expectations
 - e. Life styles
 - f. Infrastructure
 - g. Other items as appropriate to the area and expected impacts of the proposal

B. Future Environment

1. Climate (Miller)
2. Air quality (Miller)
3. Geologic setting (Moore)

4. Topography (Moore)
5. Soils (Dean)
6. Water resources (Green)
7. Vegetation (Buoy)
8. Animals (Smith)
9. Cultural resources (Laudeman)
10. Visual resources (Landscape Architect)
11. Wilderness values (Jackson)
12. Noise (Miller)
13. Recreation resources (Landscape Architect)
14. Agriculture (Ligon)
15. Forest resources (Wilfong)
16. Mineral resources (Moore)
17. Land use plans (Miller)
18. Transportation networks (existing types, uses, etc.)
(Miller)
19. Socio-economic conditions (Miller)

SAMPLE PARTIAL STAGGERED SCHEDULE FOR RANGE ES

Chapter 3 Section's	10/18 10/22	10/25 10/29	11/1 11/5	11/8 Mon	11/9 Tues	11/10 Wed	11/11 Thur	11/12 Fri	11/15 Mon	11/16 Tues	11/17 Wed	11/18 Thur	11/19 Fri	11/22 Mon	11/23 Tue	11/24 Wed	11/25 Thur	11/26 Fri	11/29 Mon	11/30 Tues	12/1 Wed	12/2 Thur	12/3 Fri	12/6 12/10	12/13 Mon
Vegetation			Due For TC REV- IEW		Rewrite		DUE																		
Wildlife														Due For TC REV- IEW	Rewrite	DUE									
Soils										Due For TC REV- IEW	Rewrite	DUE													
Water																			Due For TC REV- IEW	Rewrite	DUE				
Wild horses															Due For TC REV- IEW	Rewrite	DUE								
Recreation																			Due For TC REV- IEW	Rewrite	DUE				
Livestock Grazing																	Due For TC REV- IEW	Rewrite	DUE						
Socio- Economics																									Due For TC REV- IEW

TC - Technical Coordinator

EXAMPLE 2-4

SAMPLE OF A DAILY SCHEDULE

January	24 (Mon.)	Foothills staff orientation and brain-storming session.
	25 (Tues.)	Foothills staff team tour of project area
	26 (Wed.)	Establish schedule and assemble materials.
	27 (Thurs.)	Continue as above.
	28 (Fri.)	Assess rewrite and data needs in change-over to new scope (from first DES).
	31 (Mon.)	Continue as above.
February	1 (Tues.)	" " "
	2 (Wed.)	Prepare Public Information Brochure, begin to prepare prime package.
	3 (Thurs.)	Continue as above.
	4 (Fri.)	*Meet with Project Manager for approval of prime package.
	7 (Mon.)	Establish schedule and set first meeting; set critical path.
	8 (Tues.)	Begin team contacts and make assignments to core work group.
	9 (Wed.)	Brochure mailed.
	10 (Thurs.)	Initial meetings with core team members.
	11 (Fri.)	" " " " " "
	14 (Mon.)	Socio-Economic sub-group begins work.
	15 (Tues.)	Geology-Minerals begins work.
	16 (Wed.)	John Boaze & Bu-Rec (Wildlife) meeting initially.
	17 (Thurs.)	Initial meeting entire Wildlife sub-group.
	18 (Fri.)	Meeting with Project Manager to firm up man-hours.
	21 (Mon.)	Begin supplemental group contacts and continue work assignments.
	22 (Tues.)	Land Use & Water Resources begin work; Socio-Economics meet.
	23 (Wed.)	Continue work assignments.
	24 (Thurs.)	" " "
	25 (Fri.)	Wildlife-Fisheries begin work.
	28 (Mon.)	Recreation-Aesthetics; Archeological; Forest-Flora begin work.
March	1 (Tues.)	Continue work assignments.
	2 (Wed.)	Historical begins work.
	3 (Thurs.)	" " "
	4 (Fri.)	Continue work assignments.
	7 (Mon.)	Land Use completes work.
	8 (Tues.)	Continue work assignments.
	9 (Wed.)	" " "
	10 (Thurs.)	" " "

SAMPLE OF A DAILY SCHEDULE (Continued)

March (cont.)	11 (Fri.)	*First interdisciplinary team meeting.
	14 (Mon.)	Socio-Eco completes work.
	15 (Tues.)	*Bureau of Reclamation Water Resource Alternative package ready.
	16 (Wed.)	Continue work assignments.
	17 (Thurs.)	" " "
	18 (Fri.)	*First Supplemental Advisory Group meeting.
	21 (Mon.)	Continue work assignments.
	22 (Tues.)	" " "
	23 (Wed.)	" " "
	24 (Thurs.)	" " "
	25 (Fri.)	*Second interdisciplinary team meeting. Rec-Aes; Wildlife-Fish; Arch-Hist; Water-Res; Forest-Flora completes work.
	28 (Mon.)	Continue work assignments.
	29 (Tues.)	" " "
	30 (Wed.)	" " "
	31 (Thurs.)	" " "
April	1 (Fri.)	" " "
	4 (Mon.)	" " "
	5 (Tues.)	" " "
	6 (Wed.)	" " "
	7 (Thurs.)	" " "
	8 (Fri.)	All data has to be completed.
	11 (Mon.)	*Third interdisciplinary team meeting - (everyone must be at this meeting).
	12 (Tues.)	Continue work assignments.
	13 (Wed.)	" " "
	14 (Thurs.)	" " "
	15 (Fri.)	*Second Supplemental Advisory Group meeting.
	18 (Mon.)	Begin PDES copying and preparation.
	19 (Tues.)	" " " " "
	20 (Wed.)	" " " " "
	21 (Thurs.)	" " " " "
	22 (Fri.)	*PDES to DM & DSC for review.
	25 (Mon.)	*Begin rewrite; edit PDES.
	26 (Tues.)	Continue above.
	27 (Wed.)	" "
	28 (Thurs.)	" "

Suggestions for Preparing Environmental Statements

SECTION 3

STYLE, FORMAT, AND MANUSCRIPT PREPARATION

WRITING STYLES AND FORMATS

Choosing styles and formats for an environmental statement (ES) often presents problems for both the editor and authors. An ES is considered a technical document, but it is to be written so that the average reader of a newspaper can understand it. Therefore, essential technical information needs to be explained in an elementary manner or referenced and placed in an appendix for technical readers desiring further information. Very detailed support data can be placed in a "backup package" which is referenced in the text. Reproducible backup material can be sent to members of the public upon request. Nonreproducible items such as management framework plan (MFP) overlays and maps are cited as available for review at the appropriate BLM office. Adequacy, readability, time factors, and ease of preparation are all considered in choosing styles and formats. Sufficient time is needed for the editor to make appropriate selections prior to the arrival of the writing team.

Ideally, authors should be able to maintain their own style and choose one of several acceptable formats. Reviewers and editors would then alter or edit the manuscript to the author's satisfaction and act as liaison between the author and the production department. However, when an author's work is only one part of a group ES effort, each author needs to conform to a preselected style and format. Thus "pride of authorship" must relate primarily to content and minimally to style or format. All writers need to function within a team, and their "pride" must focus on the total product.

It is best to designate one style, one format, one method of preparation, and one procedure. This does not always mean that the choice made is the only one available. But, it will at least allow for consistency, which can easily be converted or modified as necessary.

In establishing style and format, editors and authors need to consider the reader and use whatever is needed to clearly portray the situation. Undue constraints should not be placed on color, foldouts, figures, volume size, etc. Decide what is needed, and government printers will decide who can best produce the desired results. A list of questions to consider when establishing formats and printing needs is located later in this section.

Interim Guidance attempts to provide guidance on frequently encountered questions of ES style and format. For the most part, the recommendations follow those set forth by the University of Chicago

Press in A Manual of Style. Some recommendations, however, are drawn from other manuals or were developed independently because the guidance provided in A Manual of Style did not seem appropriate.

The main purpose of Section 3 is to provide general guidance for the editor. The document does, however, include more detailed suggestions for handling some commonly encountered problems. It is recommended that editors consult the University of Chicago Press' A Manual of Style on all questions not covered in the Interim Guidance. The book addresses itself to the differences between writing for the humanities and writing for the natural resource sciences. It indirectly covers most questions raised on ES format procedures, is widely accepted, and appears to be the most complete of several manuals reviewed. The Government Printing Office Style Manual is also a useful reference; however, it does not seem to be as broad in scope as A Manual of Style.

A Manual for Writers by Kate L. Turabian (Fourth Edition) is another choice for the editor's guide. However, it too is published by the University of Chicago Press and appears to be a condensed version of A Manual of Style. Since Turabian's guide is condensed, it does not cover as many options or explain the options in full detail.

Team Briefing

As soon as ES team members arrive, the editor needs to brief all writers. The editor may suggest several useful writing guides, but team members should have already been selected partially on their report writing abilities. Grammar needs to be discussed only where it may present specific ES problems.

The fact that the ES is to be written for the public is a point which cannot be overemphasized to all authors. Even though an ES is principally to assist "decision-makers," it is to be written in a style which is readable by and understandable to the general public.

There are a number of general rules or suggestions which can be used or adapted to make formats as uniform as possible from the beginning stages. Where options are available, it is wise to designate definite choices. The various options should not be available to authors once specific choices have been made.

Outlining

An outline of what the ES should cover is normally available when the writing team arrives. This outline may have been developed in one of three forms:

1. Topical - outlining with a series of logical main topics;
2. Key-phrase - outlining with complete and specific phrases; and
3. Sentence - outlining with complete topic sentences.

Topical and key-phrase outlines are easiest to prepare, but may not thoroughly guide the writers' efforts. The sentence outline is the most difficult to prepare, but may provide maximum aid to writers.

The most conventional outline format is as follows:

I.

II.

A.

1.

2.

B.

1.

2.

a)

(1)

(2)

(a)

(b)

(i)

lower case Roman numerals

(ii)

For extremely long and involved material, an outline method which cannot run out of headings is as follows:

1.
 - 1.1
 - 1.2
2.
 - 2.1
 - 2.2
 - 2.2.1
 - 2.2.2
 - 2.2.2.1
 - 2.2.2.2
 - 2.2.2.2.1
 - 2.2.2.2.2

Whichever form of outlining is followed, it should be remembered that the actual assessment is simply an extension of a good outline. The writer divides the topics into important subdivisions, then analyzes these subdivisions into their component parts and then further divides until the detailed analysis is completed. The analyst then combines the topics of their subdivisions to determine linkages that might govern the character of the environment or impacts upon that environment. It is best if authors continue their particular assigned specialty throughout all chapters to assure continuity of thought.

A detailed outline is a tool for organizing author's thoughts, but every item in the outline does not always have to be carried as a heading into the text. However, some designation of those major outline items which are necessary to meet requirements or maintain consistency is necessary. (See Example 5-1 for a sample outline.)

Subheads

It is preferable that outline numbering or lettering not be carried into the manuscript that is submitted for BLM or for public review. In technical works, numbering within the manuscript may be considered a convenience to the reader by offering easy cross-reference, but numbering of the manuscript tends to be visually overwhelming as well as using excessive space. Therefore, it is preferable to use a meaningful system of heads, subheads, running heads, and spacing (indicated by the numbers) as shown below. (Also see Example 3-1.)

(6 spaces from top of page)

CHAPTER NUMBER

2

CHAPTER TITLE

4

SECTION HEAD

4

First Subhead

2

Paragraphs

4

Second Subhead

2

Paragraphs

2

5 Third Subhead. Paragraphs

2

5 Fourth Subhead. Paragraphs

For Chapter 2, the Description of the Environment, the format described previously must be varied slightly. The headings "EXISTING ENVIRONMENT" and "FUTURE ENVIRONMENT" are inserted between the chapter title and the section head. Although they are in upper case type, these headings are not considered section heads. The difference in format is illustrated below.

	6
	CHAPTER 2
	2
	<u>DESCRIPTION OF THE ENVIRONMENT</u>
	4
	EXISTING ENVIRONMENT
	4
	SECTION HEAD
4	
<u>First Subhead</u>	
2	
Paragraphs	
<u>Running Heads</u>	

Running heads are headings placed at the tops of pages to provide signposts to the reader. Typically, running heads for an ES would be chapter titles placed in the upper left corner of the left-hand pages and section heads placed in the upper right corner of right-hand pages. Centered running heads are a common stylistic variation particularly if Optical Character Recognition (OCR) is used. Using this system, chapter titles and section heads appear on both pages. For example, a typical centered running head for Chapter 3 might read "Impacts-Animals-Mule Deer." Whichever format the team selects, these signposts enable the reader to tell at a glance what chapter and section he is reading.

Use of running heads greatly assists the reader and reduces the length of the table of contents. All too often in many ESs the table of contents is quite lengthy, listing minor section titles and subheads in order to guide the reader to a particular section. Use of running heads eliminates much of this need. In BLM, running heads were first

utilized in the Challis Range Draft Environmental Statement (DES). Although several problems were encountered, it was possible to reduce the table of contents to only 4 pages from a previous total of 21 pages. The major problems were the length of time required to place the running heads and determining which were left-hand and right-hand pages. Running heads are added to the document when the final manuscript is prepared for submittal to the printer. At this stage, time is usually at a premium since pre-established deadlines must be met. Because of these constraints, running heads have not been previously utilized.

The use of white, self-stick addressing labels solves these problems. The appropriate running heads can be typed on the address labels and applied to the proper pages during final assembly of the manuscript after typing is completed. The principal requirement is that the label be made of high quality white paper that will photograph without leaving a shade of gray. Labels must also be large enough to accommodate two lines of type. High quality white, pressure-sensitive labels can be obtained from GSA or from local stationery stores.

The running heads are placed flush with either the left or right margin, three spaces from the top of the page and three spaces from the beginning of the text. (If the centered format is selected, placement is the same except that the heads are centered not flush with the margins.) Running heads are not used on a page starting a chapter or a section, since each chapter starts a separate page and is already titled and each major section should start on a separate page and is already titled.

When subheads are used as part of the running head, the new subhead should first appear in the running head on the page where the subhead is placed. Thus, if the discussion of mule deer begins halfway down page 2-20, the running head for that page should read "Impacts-Animals-Mule Deer" even though the page is not completely devoted to mule deer. The object of this system is to assist the reader in locating the beginning of a particular section that he wants to read.

Placement of running heads can occur only at two opportunities-- during typing of the final manuscript or after assembly of the final manuscript which involves retyping on each individual page. Placement during typing creates a problem of remembering which is a left-hand page and which is a right-hand page. The latter placement requires rehandling and typing of completed pages.

Chapter title running heads should be shortened versions of the full titles used in the table of contents. Some examples are: Description of Proposal, Description of Environment - Existing, Description of Environment - Future, Impacts, Mitigation Measures, Unavoidable Adverse Impacts, Short vs. Long Term, Irreversible-Irretrievable, Alternatives, and Consultation and Coordination.

Some typical section titles are: Climate, Soils, Aquatic Life, and Socio-Economic Conditions. The first major subhead could also be used, e.g., Mule Deer, Aquatic Life: Salmon. For the alternatives chapter, the section title is the name of the alternative; e.g., No Action, Nipple Bench Site.

The techniques described previously are intended to be used in conjunction with traditional methods of ES manuscript preparation (i.e., when camera ready copy reproduced by a mag card typewriter is sent to a printer). Some of the more advanced word processing technologies can easily add running heads to text stored on disks or in computer files. OCR can also simplify the use of running heads. If the ES team decides to use either of these technologies, the editor should inquire about the system's capability to produce running heads.

Index

ESs normally do not contain an index. Through the use of meaningful heads, subheads, running heads, and table of contents, an ES index is not necessary.

Acronyms

The ES reader may begin reading in any volume, chapter, or section. Therefore, if acronyms are essential, they need to be spelled out with each first usage in each section (each environmental component), held to a minimum, and never be grouped together.

Glossary

Each author prepares definitions for a glossary. Glossary words are arranged alphabetically, each on a separate line, and should have no end punctuation unless containing more than one-sentence definitions.

Numbers

Whether words or figures should be used to express numbers is a question that frequently arises during ES preparation. The following guidelines are recommended.

1. For percentages and for measurements of distance, area, length, volumes, pressures, etc., use figures unless the number will be the first word in the sentence. If the number is the first word in the sentence, use a word for that number only.

Examples:

The disturbed area would be 2 miles by 25 miles.

Thirty-eight acres of the 7,800 acre preserve would be inundated.

2. Figures should also be used for dates (May 21, 1975), the time of day (9:00 a.m.), governmental designations greater than twenty (592nd Ordinance Company, but Nineteenth Congress), and sums of money larger than twenty dollars (\$31).

3. Very large numbers should be expressed in figures and units of millions, billions, etc. (5.6 million not 5,600,000).

4. The first word in a sentence should never begin with a figure. If spelling out the number requires the use of a very long compound word, it may be better to reword the sentence so that the number does not come first.

Examples:

Two hundred animals use the valley as winter range.

The project would eliminate 100,680 acres of sagebrush-grass.

is preferable to

One hundred thousand six hundred and eighty acres of sagebrush-grass would be destroyed.

5. Spell out fractions standing alone (e.g., one-half), but use figures for mixed numbers like $2 \frac{1}{2}$.

6. For most numbers that do not fall in the categories mentioned above, use words for numerals up to and including twenty and use figures for all numbers greater than twenty.

Examples:

The project involves the construction of a diversion dam and two conduits.

Hunters killed 35 deer in the area last month.

7. In the same paragraph, treat all numbers belonging to the same category in the same way. If one number in the category is greater than twenty, use figures.

Example:

In 3 years, the herd grew from 10 animals to 25.

Plurals of Abbreviations and Numbers

Generally it is preferable to form the plurals of numbers and abbreviations without an apostrophe (e.g., ESs not ES's, 1930s not 1930's). Consult A Manual of Style for exceptions to this rule.

Faulty Writing

There will not be enough time for authors to reread writing guides, but copies of short, precise sections on methods of reducing writing faults can be given to authors as refreshers. Words and Ideas by Hans P. Guth, Wadsworth Publishing Company (4505 S. 5600 W., Salt Lake City, Utah 84120) has excellent sections on imprecise connectives, words often confused, redundancy, padding, euphemisms, jargon, flowery diction, and triteness which are particularly applicable to ES writing.

Potential problems in grammar, punctuation, and style can be avoided if the editor provides the authors with "refresher sheets." Rules can be copied from books mentioned herein or the editor can originate a composite listing of the rules which specifically apply.

The list which follows includes some guidelines which should be followed in ES preparation and should be included in the editor's "refresher sheet."

1. Spell out uncommon abbreviations for first usage in each section; for example, parts per million (ppm) or National Environmental Policy Act (NEPA).
2. Simple one word measurements (e.g., feet) should not be abbreviated.
3. When numbered lists are run into the text, numbers should be enclosed in double parentheses. For example: There are three types of vegetation involved (1) sagebrush-grass, (2) riparian, and (3) mountain shrub.
4. Numbered lists written in outline form should omit the parentheses.

Example:

The regulations applicable to the situation are:

1.
2.
3.
5. Ellipses usually to be three . . .
6. Complete sentences, standing alone, enclosed in parentheses are punctuated within the parentheses. Parenthetical insertions within a sentence have no punctuation (as shown here) and do not begin with a capital letter unless a proper noun.
7. In sentences containing two independent clauses joined by and, but, or nor, or for, a comma is to be placed before the conjunction.
8. Use semicolons instead of commas when separating elements in series if commas are used within any element.
9. Use a comma before the conjunction separating a series (apples, oranges, and grapefruits).
10. Use a comma both before and after etc. when following a series (apples, oranges, etc., are fruit).

The editor can also prepare a style sheet that includes the proper spelling of the names and terms that will appear throughout the document and a list of standard abbreviations for commonly used measurements, organizations, etc.

Dictaphones

It should be decided whether dictaphones can be used by authors. The use of dictaphones can offer a rapid method of proceeding from thoughts to first draft, but they have a tendency to cause drafts which are seldom properly shortened.

Objectivity

Writers should strive for objectivity. Whenever possible, assertions should be supported by references to the pertinent scientific literature. There are, however, occasions when sound scientific data is lacking and professional opinions are a valid inclusion in the document. The writer preparing the statement is in the best position to draw these opinions and, in fact, it is part of the writer's job to do so. The

opinion must be objective, unbiased, unemotional, and identified as the writer's professional opinion. The author's reasoning, his assumptions, and any literature he uses as the starting point for estimates should be clearly identified. The writer's opinion should not be constructed in such a manner as to imply endorsement of or rejection of a particular course of action. The technical coordinator and editor assure that the document is free of bias and emotionalism.

It is important to see that the word would, rather than will, is used when mentioning what the project would do or what impacts would occur. An ES discusses what would happen should the proposal be implemented. It should not be implied that the proposal will be approved.

References

If authors are not immediately briefed on reference styles, references may not be used at all or a wide variety of reference styles will appear at a time when it is difficult to convert them to a consistent style.

In the natural sciences, a list of cited works is usually entitled "References" (as opposed to the humanities in which cited works are headed "Bibliography"). The list of references is normally placed at the end of the ES. Placement at the end of each chapter results in duplication as some references are used throughout the document. Only information sources actually cited in the text should appear in the reference list.

Footnotes may be used in the text, but two other methods are preferable for ease of preparation and readability. The author's last name and date should be enclosed in parentheses in the text at the appropriate point. No comma is needed between the author and the date. When a direct quote is used or the author is referring to a particular page or selection of a lengthy book, page numbers can be included. In most cases, the author's name and the date of publication are sufficient. Additional details are given in the list of references at the end of the statement.

Examples:

(Smith 1970)

(Smith 1970, p. 124)

A typical arrangement for the reference listing includes the author (last name first, and first and middle initials), date, and the title of the publication (each reference should begin flush left with no paragraph indentation and should have run over lines indented three spaces).

The preferred format for citing personal communications is similar to the one used for published material. The words "personal communication", the last name of the person providing the information, and the date of the communication are placed in parentheses at the appropriate place in the text.

Although A Manual of Style suggests handling personal communications as footnotes, this practice is discouraged. ESs usually contain many personal communications. When extensive revisions are made to the document, ensuring that numerous footnotes stay on the proper pages could be a time-consuming job.

Personal communications should also be included in the reference list. Additional details such as the official title of the informant and his place of employment should appear there, not in the text.

If the author feels that a discussion type of bibliographical essay on the more useful sources would be more appropriate, this would also be permissible. See the section on bibliographies in A Manual of Style for complete examples on referencing books, journals, and personal contacts. It is suggested that the editor make copies of those portions pertaining to preparation of references and give them to each author before work is begun.

A summary of all personal visits, telephone calls, and correspondence concerning ES preparation should be kept up to date by each author to be used in compiling the Consultation and Coordination chapter. (See BLM Manual 1792.44F.) Consistent use of BLM Form 1541-3, Confirmation/Report of Telephone Conversation is helpful in documenting calls. The form contains carbon copies which can be circulated among team members as well as copies retained in central files. Authors should take care to inform an individual who contributes unpublished information or a professional opinion that he may be cited as an information source in the environmental statement.

Tables, Figures, and Maps

Effective use of figures, tables, and maps in ESs is encouraged. They should tell the story in such a way as to cause the reader to respond. They may help to abbreviate what otherwise would require a lengthy description and may also add interest and variety. However, if the ES is overloaded with this type of material and if it is complex and dull, it will cause the reader to pass it by, thereby losing its effectiveness. Keep figures, tables, and maps simple by not including too much information or too many variables in one item.

To avoid confusion, typed column listings are labeled tables; all maps are labeled maps; and all other illustrations such as photographs, charts, graphs, drawings, and paintings are labeled figures. All

tables, figures, and maps require a title and/or a caption and should show the source of data if not BLM's. All tables, figures, and maps are numbered by the author according to sequence and chapter, such as Table 3-1, Table 3-2; Figure 3-1, Figure 3-2; and Map 3-1, Map 3-2, etc. This enables reviewers and editors to assure the proper sequence and correctly renumber if changes are made.

Authors need include only rough sketches, descriptions, etc., with circulating draft materials. The ES cartographer can assist authors by providing base maps, rough sketches, etc., but final tables, maps, and figures are not assigned to cartographers until cleared through the technical coordinator and editor. This prevents cartographic preparation of tables, figures, and maps which may be deleted during the review process. All preliminary tables, figures and maps are reviewed by the technical coordinator and editor to assure that inclusion is desirable and to determine whether the material remains in the text or is placed in the appendix. Only then should the material go to the cartographer.

Tables, figures, and maps must be referred to at appropriate places in the text. If tables are fairly simple (of approximately three or four lines), they can be typed within the text as close to the point of reference as possible (usually within two pages), but not before the point of reference. Otherwise tables, and all figures and maps, are located on separate pages to prevent typing spacing problems. (Small tables, figures, and maps can be combined to fill a page if they still can remain close to, but not before, the appropriate text reference.) Tables, figures, or maps remaining in the main body of the statement (rather than being placed in the appendix) have pages numbered in sequence within the text. Supporting tables, maps, or figures which are not essential within the main body of the statement, and usually those that are referred to in more than one chapter, can be placed in the appendix.

It is essential that all preliminary figures, tables, or maps are always included with circulating draft material. Even if the figure, table, or map is hand drawn or crudely made, it is better to portray the idea in rough form than to omit the illustration.

All figures, tables, and maps need to be titled and/or captioned as well as numbered. Tables are numbered and titled at the top. The number is centered; the title is in all capitals and centered below the number. Several examples follow.

TABLE 2-1

SOIL ASSOCIATIONS LOCATED ON THE PLANTSITE

Figures may have a caption (a title), a legend (a phrase or sentence explaining the figure), or both. When most figures in the document have both a caption and a legend, the figures should be numbered and captioned at the bottom starting flush with the left edge of the figure margin.

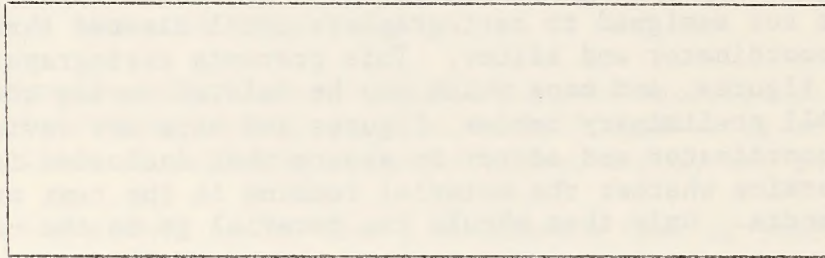


Figure 2-5. Distribution of precipitation throughout the year at Wamsutter, Rawlins, and Medicine Bow. The mean annual precipitations at Rawlins and Medicine Bow are the same (10.4 inches).

When most figures in the document have only captions, the figure number with the word "figure" in upper case should be centered under the illustration. The caption should be centered under the figure number. If this format is selected, care should be taken that all explanatory text is centered.

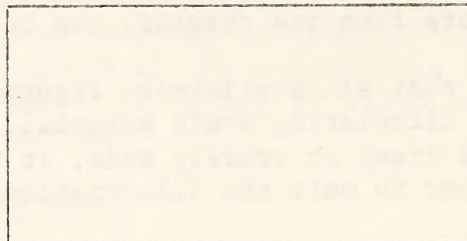


FIGURE 2-6

Example of vegetation types.

Placement of the map number and title normally varies depending on type of map and size. Placement should be such that it is easily seen but because of variations in maps, one specific place cannot be identified. Generally, all maps require a number, title, legend (in this case, a key to symbols used on the map), and a north arrow.

As a double check for inclusiveness, and in case a list of illustrations is being prepared, each author needs to list on a separate sheet all figures, tables, and maps that are to be included for each section he was responsible for. The list should include the numbers of each figure, table, or map; a brief description of the item; its size; and its precise location in the text. This information is extremely important when the statement is ready for printing.

Maps, tables, and figures should always appear after they are referenced in the text. For example, if Figure 2-2 is referenced on page 2-23, the figure itself should appear on page 2-24. If a page contains references to more than one table, map, or figure, these items should be placed in order on succeeding pages. It is acceptable to put more than one figure or table on a page as long as references to both have appeared previously. The practice of printing two small tables on a single sheet but referencing one table on the preceding page and one on the following page is discouraged.

Sometimes maps, tables, and figures cannot be located immediately after references in the text. When large preliminary maps are submitted with a PDES, they are often placed in a separate map pocket. The use of Optical Character Recognition requires that tables and figures be grouped at the end of each chapter. In these situations, it is important that items still be numbered in the same order as they are referenced in the text.

Appendix

The purpose of the appendix is to offer explanations and elaborations which are not essential in the text but which are helpful to specialists seeking further clarification (long lists, charts, tables, detailed methodologies, etc.). The appendix should not, however, simply be a place for unnecessary miscellaneous items the author was unable to work into the text. If data to be included in the appendix is readily available or can be made available to the reviewers outside of the ES, it is not included in the appendix (e.g., AMPs, Wild Horse Plans, etc.).

Appendices are sectioned and numbered Appendix 1, Appendix 2, etc., according to chapter. To assist the reader in finding the appropriate appendix, different colored papers can be used for each one. The appendices are normally placed in a separate volume at the end of a multivolume ES. If maps are referred to in more than one chapter, it may be desirable to locate them in a separate volume appendix to aid the reader in referring to them. All items are labeled with appendix number; page number; and figure, table, or map number. The page numbering is similar to the procedure for the remainder of the ES (i.e., page 15 of Appendix 2 would be labeled A2-15). Within each appendix, figures, tables, and maps may be mixed or separated.

"Backup" Information Package

Some kinds of information can be omitted from the environmental statement altogether. Complete lists of the plant and animal species found in the ES area fall into this category as does the pasture level data which is used to develop the allotment level figures used in range ESs. A package of this "backup" information is collected by the team and kept on file at a specific location. At appropriate points in the ES, a brief sentence informs the reader that additional information is available upon request and tells him where he can send for it. When nonreproducible items like management framework plan overlays are cited as "backup" information, the text identifies the BLM office where they can be reviewed.

Table of Contents

The table of contents is prepared after the manuscript is complete. It is preferable that no Roman numeral outline format be used in developing the final table. The table of contents should list the chapter numbers, chapter titles, and all headings down to and including the first subhead. Since no index is provided, the table of contents must list page numbers for all entries. The table of contents should be concise but should contain sufficient information to help the reader find any specific, significant portion of the statement. See Example 3-2 for a partial sample of a table of contents.

Page Numbering

Pages are assigned a double number that immediately informs the reader what page in what chapter he is reading. For example, the first page in Chapter 1 is page 1-1, the third page in Chapter 2 is page 2-3, etc. This system allows pages to be added or deleted within each chapter without requiring renumbering of the entire manuscript. For chapter numbers, Arabic numerals are preferable to Roman numerals.

Final Layout

The essential elements in the final ES layout are listed and described below.

1. Front cover - should be of simple design clearly conveying the document title and preparing agency. The cover is never signed by the approving official.
2. Inside title page (see BLM Manual 1792, Illustration 2, page 1 and 2) is the signature page.
3. Table of contents
4. Summary page - one page only (see 1792.44B and Illustration 3, page 1 and 2)
5. Overview - optional (see 1792.44D)
6. Body of statement - eight normally required chapters (see 1792.44E)
7. Consultation and coordination - must be a separate chapter, not an appendix (see 1792.44F)
8. Appendix - may be more than one
9. Glossary - in multivolume ESs, the glossary can be placed before the appendices
10. References

TECHNICAL REVIEW AND EDITING

Preparation of Draft

In preparing for the Bureau of Land Management's review and edit process, typing is at least double spaced. Early drafts circulated only among team members may be triple spaced. Normally the printed DES released for public review is single spaced.

It is suggested that each chapter begin on a right-hand page and each section head begin at the top of a new page. Although the use of this system may cause blank spaces to occur at various points in the text, it has the advantage of allowing reviewing, editing, rewriting, or retyping on a section-by-section basis. It also allows the public to more readily find each component in the printed document.

To avoid continual retyping, rough drafts submitted to the typists should be the author's best effort, as teams are typically short on typing assistance. Except when dictaphones are used, authors need to avoid using typists to type rough field notes prior to the first draft. Authors and typists should follow the format shown in Example 3-1 for spacing, heads, subheads, indentation, margins, etc.

References, tables, and illustrations are attached to the draft throughout the entire technical review and editing process. The editor establishes a tracking system format for each page, table, figure, and map throughout the review process as follows:

	INITIAL	DATE	DATE DRAFT
Description of the Environment	_____	_____	Author/Typist initials
Wildlife Section (etc.)	_____	_____	Mag card number

This system allows each page to be identified when reorganization between sections occurs. A single cover sheet is easily lost. The tracking heading is deleted in the final typing prior to printing.

Review Procedure Within ES Team

In order to track draft sections as they are reviewed and completed, each person signs each page of the draft as it is moved along to the next step. (See Figure 1.) The typist's initials and mag card number (if used) are placed at the top of each page of the draft. The typist makes one copy of the draft for the file and returns the original to the author. The author reviews it in typed form, revises it, initials it, and returns it to the office manager who assigns it to a typist for corrections. Copies of the corrected version are made and the draft goes to the technical coordinator for review. One copy is made for the author, if requested, and one copy is made for the archives. (The archives should retain all stages of typed draft copies.) Usually the archives file copy can be checked out by other authors who wish to read the current draft. Copies should be kept to a minimum; however, there will be times when extra copies need to be made for group discussions.

The office manager then forwards the original draft to the technical coordinator. The technical coordinator maintains a posting system which allows the project manager and/or the team leader to assure that deadlines have been met.

Technical Coordinator

The technical coordinator reviews the draft for technical adequacy, and resolves conflicts with the author. The technical coordinator sees that the draft is understandable and avoids technical jargon, checks for adequacy in terms of interdisciplinary approaches, assures that each section is coordinated with others, assures adherence to manual guidelines, assures that all assessments are sound and based on the same assumptions, and makes initial approval or rejection of maps, figures, and tables.

The major points to be considered while reviewing an ES are listed below.

1. Is it understandable to the average reader of a newspaper?
2. Is it free of unexplained and/or unsupported value judgments?
3. Is it free of justifications for or against the proposal?
4. Is it consistent with the facts and with other portions of the ES?
5. Is it objective, not biased (crusading)?
6. Is it free of philosophizing that substitutes for factual documentation?

7. Is it free of unnecessary repetition?
8. Is it properly cited and are references correct? Are assessments and conclusions of other sources properly cited? (All uncited assessments and conclusions are assumed to be those of the authors.)
9. Does the description of the existing environment describe today's conditions? A history of the area is usually not needed.
10. Are detailed support data (charts, etc.) placed in the appendix? The Description of the Environment should not be cluttered with lengthy tables.
11. If narrative in the Description of the Environment does not bear upon significant potential impacts, it is not needed.
12. Does Chapter 3, the impacts chapter, include a statement of the author's basic assumptions on which the assessment is based?
13. Are all assessments based upon the same quantitative data? (As shown in the assumption and assessment guideline section of Chapter 3 of the ES. See 1792.44E3.)
14. Are all cause/effect assessments carried to the point that impact significance can be ascertained?
15. Does the author really say what he or she means to say?
16. Are the author's assessments sound and based on facts?
17. Did the author make clear decisions and exert his or her professionalism by discussing all realistic possibilities and arriving at conclusions?
18. Are the author's conclusions substantiated?
19. Is the writing style similar throughout the ES?
20. Is all information placed in the proper chapter?

If the answer is no to any of these questions, then changes are required.

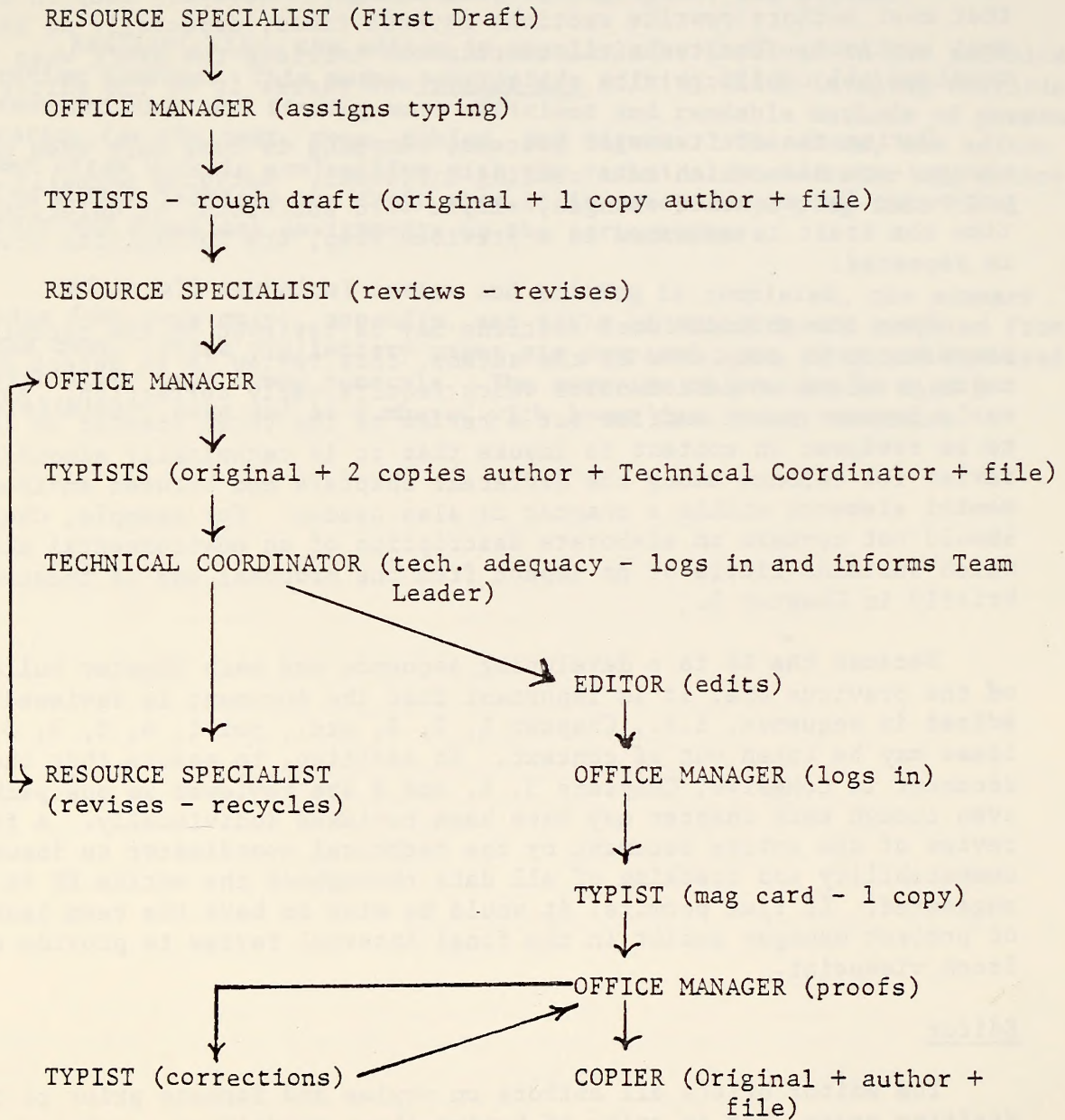


Figure 1. ES internal work flow.

The author is responsible for rewriting and additional data collection, as directed by the technical coordinator. Any conflicts that cannot be resolved by the author and technical coordinator are resolved by the team leader and/or the project manager. However, keep in mind that most authors rewrite sections several times, especially on assessment portions. The technical coordinator initials the draft when he has resolved all conflicts with the author and passes it to the editor.

During the draft review process, retyping is done only when major changes are made which make reading difficult. Retyping normally does not occur for sequence changes, simple word additions, or deletions. Any time the draft is returned to a previous step, the initialing process is repeated.

Even though individual sections may be reviewed by the technical coordinator as completed by the author, this review is to detect any major problems or deficiencies which require early correction. However, early review cannot suffice for a review of the total chapter as it has to be reviewed in context to insure that it is technically adequate. A review for balance among the different chapters and between environmental elements within a chapter is also needed. For example, Chapter 2 should not contain an elaborate description of an environmental element which sustains little or no impact from the proposal and is treated only briefly in Chapter 3.

Because the ES is a developing sequence and each chapter builds on the previous one, it is important that the document is reviewed and edited in sequence, i.e., Chapter 1, 2, 3, etc., not 1, 4, 3, 2, 5, or items may be taken out of context. In addition, to assure that the document is cohesive, Chapters 3, 4, and 5 are reviewed as one package even though each chapter may have been reviewed individually. A final review of the entire document by the technical coordinator to insure compatibility and tracking of all data throughout the entire ES is suggested. If time permits, it would be wise to have the team leader or project manager assist in the final internal review to provide a fresh viewpoint.

Editor

The editor briefs all authors on styles and formats prior to the drafting stage, but in spite of having these guidelines, each author will tend to include his own techniques and habits. The editor now is responsible for consistency of style, format, logic, readability, and objectivity.

Ideally, most of the ES editor's work should consist of mechanical or copy editing. This involves paying close attention to every detail in the manuscript such as checking for capitalization, spelling, hyphenation, agreement of verbs and subjects, quotation marks, and parentheses, number of ellipsis points, words or figures for numbers, sentence

structure, redundancy, format, and many other details of style, format, and printing preparation. The editor then provides liaison between the author, technical coordinator, cartographer, and printer.

Realistically, the editor is usually also involved in the technical review process. This means substantive editing which involves rewriting, reorganizing, and finding more efficient and readable methods of presentation for the text, maps, tables, and figures. Therefore, the editor may often work in conjunction with the technical coordinator and authors. The editor initials the draft when it is ready for typing into final form and finalizes assignments to the cartographer.

After all technical review and editing is completed, the summary page (one page only), appendix, and table of contents are prepared from the text. Since preliminary pages are prepared last, they are numbered with lower case Roman numerals. The overview or preface is also a preliminary page and is numbered with lower case Roman numerals.

WORD PROCESSING

Environmental statement teams faced with the need to produce a lengthy document in a short period of time may want to investigate some of the more advanced forms of word processing technology that are available today. The two general types of word processing systems that seem most appropriate for ES preparation are the stand-alone video display text editors and the time-shared text editing services.

Stand-Alone Video Display Text Editors

A typical stand-alone system consists of a video display (cathode ray tube or plasma tube), keyboard, printer, small minicomputer, memory, and storage media--usually floppy disk or tape cassette. Some of the higher priced systems offer data as well as word processing capabilities.

Some of the text editing capabilities found in display systems currently on the market are listed below.

1. Insert or delete characters, words, lines, sentences, paragraphs, or pages. Within the limits of the storage medium (usually 60 to 70 pages of text), the system can automatically reformat the document.
2. Move portions of text within the storage medium and; with dual disk systems, from disk to disk.
3. Automatically paginate, return carriage, align columns, and justify right margins.
4. Search by page index or character string.
5. Provide variable line spacing.
6. Allow use of superscripts or subscripts.
7. Provide variable type pitch: pica (10 pitch), elite (12 pitch) and proportional.
8. Allow input from mag tape cassettes, cartridges, cards, floppy disks, Optical Character Recognition (OCR), or communication lines.
9. Output to magnetic media, high speed printers, paper tapes, or communication lines.
10. Provide an interface with photocomposition equipment.

Many of the display systems do not have all of these features, and some of the newer programmable systems have additional capabilities. Stand-alone display systems are cost effective for most applications. The notable deficiency is the amount of stored text that can be edited at one time. The operator is limited to the size of the disk - usually 60 to 100 pages.

Time-Shared Text Editing Services

Several companies now offer time-sharing services for word processing activities. In this mode a number of users share the services of the vendor's centrally located (host) computer and its peripheral hardware.

Text editing is performed on a terminal located in the user's offices but connected by telephone line to the time-sharing firm's computer. The only items of equipment needed are terminals and coupling devices to link the terminals with the telephone line. The user also requires a password to access the system.

In selecting a terminal, the user has a wide variety of options. The most commonly used terminals are modifications of the IBM Selectric typewriter. Both the Mag I and Mag II typewriters feature communicating options that convert them to terminals capable of communicating with a central computer. Many stand-alone systems can also be used as terminals.

The principal advantage of a time-sharing service is the availability of the many powerful text-editing features. Editing is not limited to the confines of a single disk (about 60 to 70 pages of text) as it is with most stand-alone equipment. Using a time-sharing service, an operator is able to add, delete, or move nearly unlimited amounts of text almost anywhere in a document. When these revisions are complete, the computer automatically reformats the text. Retyping the entire document, an unavoidable procedure when extensive revisions are made to text typed on mag cards, is eliminated with time-sharing.

A feature called "global search and replace" allows the editor to locate every occurrence of a particular word in the document and, with one command, change it to another word. For example, BLM could be changed to Bureau of Land Management. The search feature alone can be used to assist a technical coordinator in "tracking" information through an ES.

Some additional features offered by time-sharing services are:

1. Text printed with or without line numbers,
2. Access to a high speed printer and guaranteed 24 hour delivery service, and
3. Interface with photocomposition equipment.

PRINTING

General Considerations

Usually, the editor makes the final layout and printing arrangements. However, it is also desirable that the entire team, and certainly the cartographer, at least be aware of certain items which must be resolved before printing time.

As mentioned in the style and format section, rather than placing unnecessary constraints on color, foldouts, figures, volume, size, etc., it should first be decided what is needed. All efforts are to be made to remain within the Government Printing Office (GPO) printing capabilities; however, local printers can assist in preparing the ES for the most efficient and most desirable printing. They can also be conferred with on a daily basis to make suggestions or answer questions.

Covers, illustrations, etc., do not have to be completely uninteresting. Cover designs, colors, chapter dividers, variations in lettering, etc., can make an ES attractive. However, an ES should not be so attractive that the public or the applicant would criticize an unnecessary use of funds. No more "dressing up" of the document should be done than is necessary to make the document clearly portray the situation in an attractive, clear, and readable format.

The usual experience has been that printing will usually take a minimum of 4 to 6 weeks. The rule if color is used is 6 weeks. If printing is done by GPO, the final ES normally must be submitted all at once, although that depends upon GPO's contractor.

The request for printing is submitted to GPO (see BLM manual section 1511.11F and Government Printing and Binding Regulations, Oct. 1974 #23). If GPO cannot meet specifications spelled out in the request, they will waive government printing and accept bids from outside printers who can meet the required specifications.

If it is desirable to confer with a local printer during the planning process, that printer may arrange to be on a Government Printing Office contract list. This will allow him to bid on the printing should the government not be able to meet requirements. Problems of communications and scheduling are created if the printer is not located in the same town as the ES team.

The editor, cartographer, and the authors need to keep the following questions in mind while establishing formats and needs.

1. Is color necessary?
2. What size, texture, and color of cover and text paper will be best?
3. What size and color print, including labeling, will be best? Will print be typeset or must all material be camera ready? What style of type should be used for final manuscript if it is to be camera ready? (Pica is larger than elite.)
4. What size and scale should be used for maps? What size and how many folds will be desired?
5. What size should photographs be? Must they be glossy? Can color transparencies be efficiently and economically converted for black and white publication? Are excessive aerial photographs really helpful to the average public? How will "crop marks" be placed on the photographs, and who will do it?
6. What are general reduction and blow-up capabilities of most printers for tables, maps, and figures?
7. Is artwork desirable for cover or text? Is there a contract for such work? Interior illustrations and photographs may be used without permission, but non-Interior illustrations cannot be used without permission and credit.
8. What type of binding will be used and what will binding margin requirements be? (A 1-1/2 inch left margin will allow any type of binding.)
9. Where should page numbers be placed to avoid being covered by bindings or cropped off when pages are trimmed?
10. What will be the overall size of the printed draft?
11. What visual aids will be desirable for public presentations and hearings? Assure early preparation by artists, photographers, cartographers, etc.
12. How many copies are anticipated?

Photocomposition

Photocomposition is also known as phototypesetting and erroneously referred to as cold type. The document to be typeset is converted to a coded nine-track magnetic tape which can be read by a photocomposition system. The system projects images of the typed characters comprising the document onto photosensitized film or paper which is then made up into mechanicals or photomechanicals from which printing plates are produced.

Equipment presently exists that will convert floppy disks, the common storage media employed in stand-alone word processing systems, to the necessary coded nine-track tape. Time-shared word processing firms can also produce such a tape.

Listed below are some benefits of photocomposition.

1. Eliminates the opportunity of error during typesetting. There is no rekeying copy, no chance of third party error.
2. Reduces time spent proofreading typeset copy. If the nine-track tape is correct, the output from the photocomposer will be correct.
3. Eliminates costly author's alterations to typeset copy. Revisions are made prior to composition.
4. Enhances the visual quality of an environmental statement as well as improving the readability.
5. Composed documents are more compact, reducing number of pages necessary; a 1,000 page ES could realistically be printed in 250 pages.
6. Reduces the paper and printing costs.
7. Reduces printing turnaround time.
8. Photocomposed documents are computer stored for future modification and reuse.

All photocomposition must be done by GPO in Washington. Suggested steps in the process are listed below.

1. BLM produces a nine-track tape for composition.
2. Mail special delivery or air freight to GPO, Washington, D.C.
3. GPO will produce within 3 working days a photocomposed environmental statement, regardless of size, ready for press.

4. GPO will forward back by the same delivery service to the respective office the composed camera-ready copy, as well as the original nine-track tape.
5. GPO will also file the photocomposed tape for future use (draft to final, etc.). If no substantial changes have been made (e.g., new sections), then GPO will be able to use the original tape (draft) to interface the changes on the tape to produce the final statement.
6. The respective office will then have the statement printed. The output charges for photocomposition will average \$4 to \$5 per output page.

Optical Character Recognition (OCR)

A computerized electronic typesetting process, Optical Character Recognition, is available for printing both draft and final environmental statements. The copy to be set is typed on special OCR paper (GPO form 7406) by a mag card typewriter equipped with a special carbon ribbon and a special OCR font. The typed copy is then read by an OCR scanner which produces a tape for typesetting the document. The process can produce a document printed in two columns. It makes possible the use of different type faces to distinguish the various headings and subheadings.

Small tables and figures can be photographically reduced to a column width for OCR output (3-1/8"), and can be inserted in the camera-ready copies after GPO print-out. Also 3" by 5" black and white photographs can be reduced to column width and inserted in the appropriate place within the narrative.

Should the OCR process be used, all typing should be done in OCR format from the beginning preparation of the DES to avoid having to change typing margins and format later on.

All OCR electronic typesetting must be completed by GPO in Washington, D.C. For additional information contact: Electronic Printing, U.S. Government Printing Office, N. Capitol and H Streets, Washington, D.C. Also, see the Final Environmental Statement for Northwest Colorado Coal, FES 77-1 for an example of OCR printing.

Use of Publications Pagination Form

Communication between the ES team leader, or editor, and the printer is essential for accurate ES printing. This is often difficult because of the location of GPO offices and the awarding of printing contracts to printers outside of the town in which the ES team is located. No matter how well the ES is laid out by the editor, unless all pertinent information about page, figure, and map placement is transmitted to the printer, the printed copy may bear no resemblance to what was submitted.

Use of a publications pagination form (Example 3-3) is an excellent way of transmitting vital information to the printer. This form is used to indicate the layout of the document from page one through the end. It provides a method of communication between the ES editor and the printer. It also allows the printer to keep track of each page of the document and to insure that nothing is out of place or has been misplaced. Use of this form provides a standardized way of insuring that each party is talking about the same item when instructions or clarification are required.

Publications pagination forms are available from GPO offices. Example 3-3 illustrates the use of the form. Use of this form is suggested for submittal of each ES to GPO, or another printer, for printing. The example is typed; however, the form may be filled out legibly by hand. Many pages will be required for each ES. One complete copy is retained by the ES editor to refer to if any questions arise after the manuscript has been submitted to the printer.

EXAMPLE 3-1

SAMPLE OF USE OF HEADS, SUBHEADS, AND SPACING

CHAPTER 4

ENVIRONMENTAL IMPACTS

WILDLIFE

Chapter numbers, chapter titles, and section heads may be shown by centering, spacing, and underlining as shown above. For chapter numbers, Arabic numbers are centered six spaces down. Chapter titles are underlined, are in all capitals, and are centered two spaces below the chapter number. Each major section head (environmental element such as soils, water, wildlife, etc.) begins on a new page (except for the first section under the chapter number and title, as shown above); is centered; is in all capitals; and begins six spaces from the top (except for the first section under the chapter title, where it is four spaces below the chapter title as shown above). Other pages not beginning with chapters or section heads have the first line beginning eight lines down (as shown on the next page). It is optional whether the word Introduction is used as a subhead (as in the case of this paragraph); however, if the word Introduction is desired, it is treated the same as Mining below. The first paragraph of a chapter is not indented.

Mining

A first subhead begins four spaces below the last sentence of the preceding paragraph. First subheads are even with the left margins, have the first letter of each important word capitalized, and are underlined. Two blank spaces should be allowed between the last sentence under a first subhead and the placement of the second subhead. The first sentence of a paragraph should not end a page, and the last sentence of a paragraph should not begin on a new page.

Big Game

The second subhead is the same as the first subhead, but is not underlined. Also there are only two spaces between the second subhead and the next above, not four.

Elk. The third subhead begins two spaces below the text above. It is indented five spaces (as are paragraphs), is underlined, has the first letter of each important word capitalized, and is followed by a period before beginning the first sentence of the paragraph. (The first sentence should not contain a pronoun referring back to the subheading.) Two spaces should be allowed below the last sentence under the subhead.

Winter Range. The fourth subhead is the same as the third subhead, but is not underlined. No more than one head and four subheads should be used. Also, it is not necessary to continue the same level of subheads.

Summer Range. If Arabic or Roman numerals are desired, the above system is still to be used. Simply place the Arabic or Roman numerals even with the left margin before beginning the first word of the subhead or sentence. Or preferably, place the numerals in the left margin to avoid clutter within the text for readers not using them.

Upland Game

A 1-1/2 inch left margin will allow any type of binding. A 1-inch margin should be left on the bottom and right side.

Pheasant. Spacing should be in even increments as shown by 2, 4, and 6 spaces (or by 1-1/2, 3, and 4-1/2 spaces, if the final is to be 1-1/2 spaces) for ease of mag card operation.

Grouse. Also see A Manual of Style for placement of running heads in final manuscripts.

EXAMPLE 3-2

PARTIAL SAMPLE OF TABLE OF CONTENTS

CONTENTS

	Page Numbers
Summary page	i
Preface	ii
1. Description of the Proposed Action	1-1
Mining	1-9
Crushing and Conveying	1-16
Retorting and Upgrading	1-20
Pyrolosis and Oil Recovery Unit	1-21
2. Description of the Environment	2-1

PUBLICATIONS PAGINATION

EXAMPLE 3-3. PUBLICATIONS PAGINATION FORM

PUBLICATION TITLE Challis EIS		REVISION DATE	
SI	PAPER	TYPE	PUNCH OR DRILL
NUMBER COPIES		BINDING INSTRUCTIONS	

Back side of front cover	Inside Signature page	P 1-4	Colored Map #1-1 P 1-5	BLANK Back of Map P 1-20	Colored Map #1-4 P 1-21
BLANK	(Reduce to page size) Summary page P-i	BLANK Back of Map counts as P 1-6	P 1-7	BLANK Back of Map counts as P 1-22	Colored Map #1-5 P 1-23
P ii	P iii	P 1-8	Colored Map # 1-2 P 1-9	BLANK Back of Map counts as P 1-24	Colored Map #1-6 P 1-25
BLANK	Table of Contents TC-1	BLANK Back of Map counts as P 1-10	P 1-11	BLANK Back of Map counts as P 1-26	Colored Map #1-7 P 1-27
TC-2	TC-3	P 1-12	P 1-13	BLANK Back of Map counts as P 1-28	Table # 1-6 reduce to page size P 1-29
TC-4	Title Page	P 1-14	P 1-15	Table #1-6 cont. P 1-30	Table #1-6 cont. P 1-31
BLANK	Chapter 1 P 1-1	P 1-16	P 1-17	Table #1-6 cont. P 1-32	Table #1-7 P 1-33
2	P 1-3	P 1-18	Colored Map #1-3 P 1-19	Table #1-7 P 1-34	Table #1-8 reduce to page size P 1-35

SECTION 4

PUBLIC PARTICIPATION

This section describes how BLM seeks to cooperate with other federal agencies, bureaus, and offices to achieve meaningful public involvement in the environmental statement process. Four helpful references are:

1. BLM Manual Section 1601, Appendix 2,
2. The Record of Public Involvement found in the URA/MFP documents,
3. BLM Training Session Notebook, Public Participation in the Environmental Assessment Process. (Available on request from Washington Office 260.), and
4. Draft Departmental Manual 301 DM 2.1, August 11, 1978, FR.

PREPARATION PLAN

The preparation plan provides the opportunity to begin identifying which other agencies, bureaus, offices, groups, and individuals should be involved in the environmental statement (ES), the nature of their involvement, and the ways involvement is to be achieved.

Item C.2 of the preparation plan (see 1972.3 and Illustration 1) identifies the agencies with jurisdiction and expertise that need to be consulted. The BLM Three Level Multiple Resource Advisory Board should also be consulted. In listing the agencies, bureaus, and offices that should be involved, it is helpful to distinguish between participating agencies, bureaus, and offices (see Interim Guidance, Section 1) that would be directly involved by having representatives on the team and other agencies, bureaus, and offices with indirect involvement (i.e., those that provide data and analytical input without actually being part of the team).

Item F. of the preparation plan, Public Involvement Arrangements, identifies each group that should be involved, and the techniques that will be used to involve them in the appropriate aspects of the ES preparation process. Example 4-1 is a sample format that can be used for this purpose. The Challis ES Preparation Plan illustrates one way of preparing Item F. (See Washington Office Information Memo No. 75-187.)

The public affairs officer from the appropriate state office may assist in developing the previously described items in the preparation plan. However, it is highly desirable, especially on large ESs, to have a full-time team member designated as the public involvement coordinator.

INVOLVEMENT DURING ES PREPARATION

Other Agencies, Bureaus, and Offices

Direct Involvement (Participating Agencies, Bureaus, and Offices)

Direct involvement on the team by personnel from other agencies, bureaus, and offices has been discussed in Section 1 of this document. It should be noted that these personnel are part of a team working together to assess impacts factually and objectively. They are neither there to speak for or represent their agencies, bureaus, or offices on policy matters, nor to represent an agency, bureau, or office position pertaining to a decision on the proposed action.

Indirect Involvement (Nonparticipating Agencies, Bureaus, and Offices)

Team members need to seek data and analytical input from agencies, bureaus, offices, and people that are as complete, up-to-date, and accurate as possible. Where applicable, the BLM Three Level Multiple Resource Advisory Board should be consulted. Whenever data obtained from other agencies, bureaus, offices or boards is utilized it is referenced in the ES.

General Public

Direct Team Involvement

Involvement of experts from the public sector as consultants in areas of expertise where no other expert is available is encouraged. It must be clear that these people are to be objective analysts and synthesizers and should have no vested interest in either the proposed action or issues related to it.

Indirect Team Involvement

A major concept of the ES is the fact that an environmental assessment cannot be adequately conducted without public involvement. The team needs to seek involvement at several points in the ES preparation process.

Notification of the ES. The public should be informed as soon as the preparation plan has been approved. (See 1792.33 and .71.) This is accomplished with news releases and letters to state and federal agencies, bureaus, and offices and, as appropriate, to key groups. (See Examples 4-2 and 4-3.) An excellent method of informing the public would be to use a pamphlet covering issues pertinent to controversial or large scale ESs. It is suggested that all articles and letters include the project manager's, team leader's, or public involvement coordinator's name and address so all responses are directed straight to the team.

Describing the Proposed Action. The public and the applicant may provide valuable input in describing the stages of implementation and discrete operations of the proposed action, especially when the action originates outside BLM (i.e., with an applicant). The publics involved at this point are most likely to be professional experts. For example, if a team is analyzing the impacts of a desert land entry program, it would be helpful to ask farmers to describe and show what their operations are like and what their proposed operations on the land applied for may be like.

Describing the Existing Environment. Public input can be especially valuable in describing all environmental elements, particularly those dealing with human values. Technical experts can provide important information concerning various elements like climate, air quality, etc. The views of individuals who are not recognized as professionals, but who have knowledge through first-hand experience, should also be sought. Input from the public is the best way to identify the attitudes and social and cultural values surrounding the proposal.

Assessing Impacts. Impact assessment should cover unmitigated impacts, mitigating measures, unavoidable adverse impacts, short term - long term implications, and irreversible - irretrievable impacts. In order to adequately assess the environmental impacts of a proposed action, public involvement is absolutely necessary.

Identifying Alternatives. The courts have held that federal agencies must consider all alternatives that are technically feasible and reasonably available even if they are outside the realm of one particular agency's authority. The public, being unrestricted by that authority, is free to take the initiative in identifying alternatives. Alternatives suggested by the public may be highly technical (e.g., an alternative design proposed by a university scientist) or more broadly based on general knowledge of the situation.

The form shown in Example 4-1 can become a real working document at this point. Be sure to recognize that formally organized groups are easily identified but some informal groups are not (e.g., old people or blue collar workers). Since the informal groups may sustain the greatest impacts, efforts will have to be made to involve them. Example 4-4 is a partial list of strategy options.

Be sensitive to the constraints that may prevent many groups from responding to the common public involvement techniques. For example, people who cannot speak English, are not well educated, or do not have good clothes may be less likely to attend general public meetings.

Availability of Materials for Public Review

During the preparation process, the ES team occasionally receives public requests to review the preliminary materials being developed for the statement. The procedure for handling these requests is detailed in BLM manual section 1792.74. Generally speaking, no requests can be denied without approval of the Director of the Bureau of Land Management. One technique for receiving early public input is to circulate an advance copy of the draft environmental statement (DES) to key agencies, bureaus, and offices who had input into its drafting for an unofficial review. The advance copy can be circulated to the key agencies for review at the same time the DES is being reviewed by the Washington management staff and Division of Environmental Assistance. This procedure is especially important in dealing with Department of the Interior agencies who have jurisdictional interest. The preliminary review is then reflected in Chapter 9 of the ES, Consultation and Coordination. (See 1792.44F.)

INVOLVEMENT DURING DES REVIEW

Other Agency, Bureau, and Office Review

Requirements for formal public reviews are identified in the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) Guidelines, Department of the Interior Manual 516, and BLM manual section 1792.52. Prior to completion of the draft ES, development of a public review plan is suggested. A copy of the ES must be sent to anyone requesting it and to those who submitted data for the draft preparation.

Appendix 2 of the CEQ Guidelines is utilized to determine which agencies, bureaus, and offices are required to review the draft. (See 1792, Illustration 5, for a sample of a letter requesting comments.) All agencies, bureaus, and offices which may have jurisdictional responsibilities under various acts (e.g., U.S. Fish and Wildlife Service under the Endangered Species Act) are also required to review the draft if it involves items under their jurisdiction. The review requirements of state governments should be determined early, especially their plans for handling distribution and review of the draft ES. In some states, clearinghouses have established strict procedures for handling and coordinating draft review. If this is the case, team members should not promise copies to individual state agencies or to any state government personnel they have contacted for data.

Hearings

Public review may or may not involve hearings. Criteria for determining when a public hearing is required is provided in BLM manual section 1792.73B. For major projects generating public controversy,

formal public hearings should always be held. In all instances requiring a public hearing, an administrative law judge is suggested.

Preparing for Public Hearings

The success of hearings depends a great deal on the amount of previous preparation (procedures for holding a public hearing are contained in Department of the Interior Manual 455, Chapter 1 and BLM manual section 1792.73). The BLM Director must be notified at least 45 days in advance of the first hearing in order to request departmental services of an administrative law judge. The request for the judge's services must specify dates, time, cost coding, travel, and room arrangements. Therefore, the hearing dates and locations will need to be finalized prior to completion of the draft ES. The assigned judge will then contact the ES project manager for additional details and will specify how the hearings are to be conducted.

If more than one hearing and location is planned, sufficient lead time becomes crucial. The location should be well known, easily accessible, and of sufficient size (seat minimum of 100 people). Hearing times should accommodate the maximum number of people; therefore, it may be advisable to schedule both midday and evening hearings in the same location.

The notice of the hearings must be published in the Federal Register 30 days prior to the hearing, and the DES must have been made public at least 30 days prior to the first meeting.

The following guidance will assist in preparing the Federal Register notice. (Example 4-5 provides a complete sample.) The Register submission must: (1) be double spaced, (2) be signed, (3) contain the title of the signing officer, (4) be certified for signature, and (5) be dated. It must be noted that certification of Federal Register notices would be done by the Department of the Interior official in Washington (according to IM76-52), not in the field offices.

There must be a signed original Federal Register notice and two certified copies, or a signed original and two signed duplicates certified as true copies of the original. The notice must specify all places and times the hearings are to be held, where registration forms may be obtained, and to whom they are to be mailed for preregistration. Allow a minimum of 10 working days for the Register notice to clear the Department of the Interior. Additional lead time may be necessary if special clearance is required through the Office of Environmental Project Review (OEPR). The Federal Register notice is sent to the Office of the Federal Register, Material Archives and Records Service, Washington, D.C. 20408. The Register Office will require 1 week of preparation prior to printing. It is necessary to track the notice to insure timely submission from the Department of the Interior to the Federal Register Office.

A summary handout needs to be prepared and made available to all interested persons before the hearing. This handout could take several forms. One would be a separate summary prepared from the ES to briefly cover the following points: Study area, description of the action, impacts and alternatives, and impacts of alternatives. In addition, the summary should also include the purpose, dates, and locations of upcoming public involvement forums and a description of relevant past (background) and future events surrounding the ES. A second way is to prepare an abstract utilizing exact pages from the ES. This was successfully accomplished for the Foothills ES (DES - 76/2), prepared by the Colorado State Office. (See Example 4-6 for the introduction to this abstract.) When using an abstract, care should be taken to prevent extracting information out of context from the ES creating the possibility of confusion and misunderstanding.

This summary or abstract is made available to all interested persons before the hearings. The purpose is to provide a general idea of the contents of the ES for those who will never read the entire document. This handout can be publicized in news releases and letters, and can also be available for distribution at the hearing.

A hearings handout, which is different from the summary, is also needed. This is prepared and distributed immediately prior to convening of the hearing. It lists the judge, panel members, schedule of witnesses based on preregistration, and rules of procedure.

In summary, the following points need to be accomplished prior to conducting a hearing.

1. Determine hearing sites and arrange for space. (See Example 4-7 for typical hearing room arrangement.)
2. Arrange for judge. Usually, the judge should provide his or her own transportation.
3. Contact General Services Administration (GSA) to arrange for a court recorder. It is important to stipulate the delivery of a typed hearing transcript within 72 hours after completion of the hearing at each site. A delay in providing the transcript prevents timely analysis of comments.
4. Develop ground rules and hearing procedures in cooperation with the judge. (Develop a list of participating judge, panel members, and hearing procedures.)
5. Develop a hearing registration form. (See Example 4-8.)
6. Develop a summary handout.

7. Obtain room accommodations for all hearing participants at each hearing site.
8. Arrange for microphones, recorders, typewriters, project maps, name tags, and directional signs to hearing site.
9. Arrange transportation and lodging for all agency participants.
10. Arrange for an electronic technician to handle the microphones and recording equipment.
11. Arrange for press coverage at the hearings.
12. Prepare Federal Register notice and submit for publication in time to allow printing 30 total calendar days prior to hearings.
13. Notify the public of hearings with news releases, letters, posters, etc.

Hearing Procedures (See 1792.73B2)

The assigned judge determines how the hearing will be conducted. However, there is usually a cooperative effort and a mutual approach can be taken. The following procedure describes a typical approach which has worked well at previous ES hearings.

The panel at the hearing can consist of the ES project manager, team leader, technical coordinator, and the major authors (analysts) in charge of a single or group of environmental elements. In addition, a receiver of exhibits is required to accept and record any written material the witnesses may wish to submit. In most cases, a time limit on testimony will be imposed and a timer of witnesses will be required. This function may be carried out by the judge if he agrees. At least two persons are required outside the hearing room to hand out material, accept registration forms, and maintain a current list of attendees wishing to provide testimony. They may also perform other duties such as making copies, etc.

The judge will call the hearing to order, state the purpose of the hearing, and lay out the hearing procedures or ground rules. Using a large map, the project manager or team leader gives a very brief synopsis of the project and areas covered and how the statement was prepared. Registered witnesses are then called. The purpose of the panel is to ask for clarification of the witnesses' comments, when needed. Quite often the comments received are not clear and this presents the only opportunity for the team to ask the witness to clarify his remarks. Also, the witnesses may quote material that the team members are not aware of; the team members may wish to request copies for their analysis. The judge may handle all questions or may

recognize the panel members who will ask questions directly. Witnesses should not be allowed to ask questions of the panel members because the panel members do not represent the entire body of expertise involved in statement preparation. Witnesses may comment only. The comments will then be answered in the final ES after the entire team has had the opportunity to analyze the comments. Individuals who want a copy of the hearing transcript should make arrangements with the court reporter.

EXAMPLE 4-1

(SAMPLE) FORMAT FOR PUBLIC INVOLVEMENT ARRANGEMENTS

THE PUBLIC

	STRATEGIES FOR INVOLVEMENT				
	Group	Group	Group	Group	Group
ENVIRONMENTAL ASSESSMENT PROCESS					
Announce - Inform					
Describe Action					
Identify Alternatives					
Describe the Existing Environment					
Assess the Environmental Impacts					
Assess Controversy					
Announce Decision					
Respond					

EXAMPLE 4-2

SAMPLE NEWS RELEASE

UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Land Management
P.O. Box 1828, Cheyenne, WY 82201
Currier - 638-3301

PUBLIC LANDS REPORT

ENVIRONMENTAL STUDY UNDERWAY

For Immediate Release

A study of the possible environmental impacts resulting from a proposed railroad and related coal mining activities in the eastern half of Wyoming's Powder River Basin is now underway according to Dan Baker, Bureau of Land Management's Wyoming State Director.

"The study team has met with mining and railroad companies to obtain information on their proposals and future plans," Baker said. Other federal and state agencies will also provide information for use in preparing the environmental impact statement.

"We are looking for data from many sources," Baker commented. Although there will be a two-month period for formal public review following the release of the draft report June 1, he stressed that comments from concerned individuals or interest groups would be welcome throughout the data gathering and analytical process. Anyone wishing to contribute information or comments to the environmental impact statement may contact either Robert Browne, Project Manager, or Robert Currier, Public Affairs Officer, at their office in the Hitching Post Inn, 1700 West Lincoln Way, Cheyenne, Wyoming or phone 307-638-3301.

Baker noted also that the environmental impact statement will not recommend any particular course of action but will be an analytical tool to assist in making decisions about the proposed development plans for that part of the basin.

END

EXAMPLE 4-3

SAMPLE EARLY NOTIFICATION LETTER

ES TEAM
P.O. Box 1828
Cheyenne, Wyoming 82001

March 23, 1974

Director
Bureau of Outdoor Recreation
Department of the Interior
18th and C Streets, N.W.
Washington, D.C. 20240

Dear Sir:

We are preparing an environmental impact statement (ES) on the eastern region of the Powder River Coal Basin in Wyoming. We have attached for your information (1) our press release, (2) ES team organization chart, (3) briefing statement, and (4) ES outline.

Members of our team may already be in contact with your field representatives. We would appreciate any input that your organization may wish to make concerning the ES. Please feel free to contact Mr. Robert Browne or Mr. Robert Currier at the ES team headquarters located at the Hitching Post Inn, 1700 West Lincoln Way, Cheyenne, Wyoming 82001. Our phone number is 307-638-3301, Ext. 330 (FTS 307-778-2306).

Sincerely yours,

Project Manager

Enclosures 4

EXAMPLE 4-4

PUBLIC PARTICIPATION STRATEGY OPTIONS

Informal Public Meetings
Listening Sessions
Formal Public Hearings
Informal Group Discussions/Meetings
Workshops
Consultation Visits with Key Individuals
Personal Interviews
Open House
Press Conferences News Releases
Questionnaires and Surveys
Response Forms
Letters of Request for Comments
Mass Mailings
Newsletters of Community Organizations
Telephone Calls
Posters/Signs/Displays
BLM Pamphlets
Field Trips
Service on Local and Regional Committees
Utilizing the Forums Provided by Other Organizations
Use of Mass Media/Radio-Television
Advisory Committees
Ad Hoc Committees

EXAMPLE 4-5

SAMPLE FEDERAL REGISTER NOTICE OF HEARINGS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C.

NOTICE OF PUBLIC HEARINGS FOR DRAFT ENVIRONMENTAL STATEMENT
ON DEVELOPMENT OF COAL RESOURCES IN THE EASTERN POWDER RIVER
BASIN OF WYOMING

Notice is hereby given that public hearings will be held at:
(1) Little America, Cheyenne, Wyoming, June 24, 1974, at 7:00 p.m.,
and June 25, 1974, at 9:00 a.m., MDT; (2) Ramada Inn, Casper, Wyoming,
June 26, 1974, at 1:30 p.m. and again at 7:00 p.m., MDT; (3) Campbell
County High School, Gillette, Wyoming, June 27, 1974, at 7:00 p.m., and
on June 28, 1974, at 9:00 a.m., MDT.

The draft environmental statement for the development of coal
resources in the Eastern Powder River Basin of Wyoming is expected to
be available to the public the first week of June 1974. A separate
Federal Register Notice of Availability will be forthcoming describing
the locations where the draft statement may be obtained or reviewed.

The public hearings will be conducted by an Administrative Law
Judge, U.S. Department of the Interior, of Salt Lake City, Utah.
Individuals wishing to testify may do so by appearing at a hearing
place as previously specified. Persons wishing to give testimony will
be limited to ten minutes, with written submissions invited. Prior to
giving testimony at the public hearings, individuals or spokesmen are
requested to complete a hearing registration form. Registration forms
may be obtained by contacting Environmental Statement Team, Hitching
Post Inn, 1700 West Lincoln Way, Cheyenne, Wyoming 82001. Written
comments may also be submitted to the State Director, Bureau of Land
Management, Department of the Interior, 2120 Capitol Avenue, Cheyenne,
Wyoming 82001.

Dated: May 20, 1974

Director

Enclosure 1-71

EXAMPLE 4-6

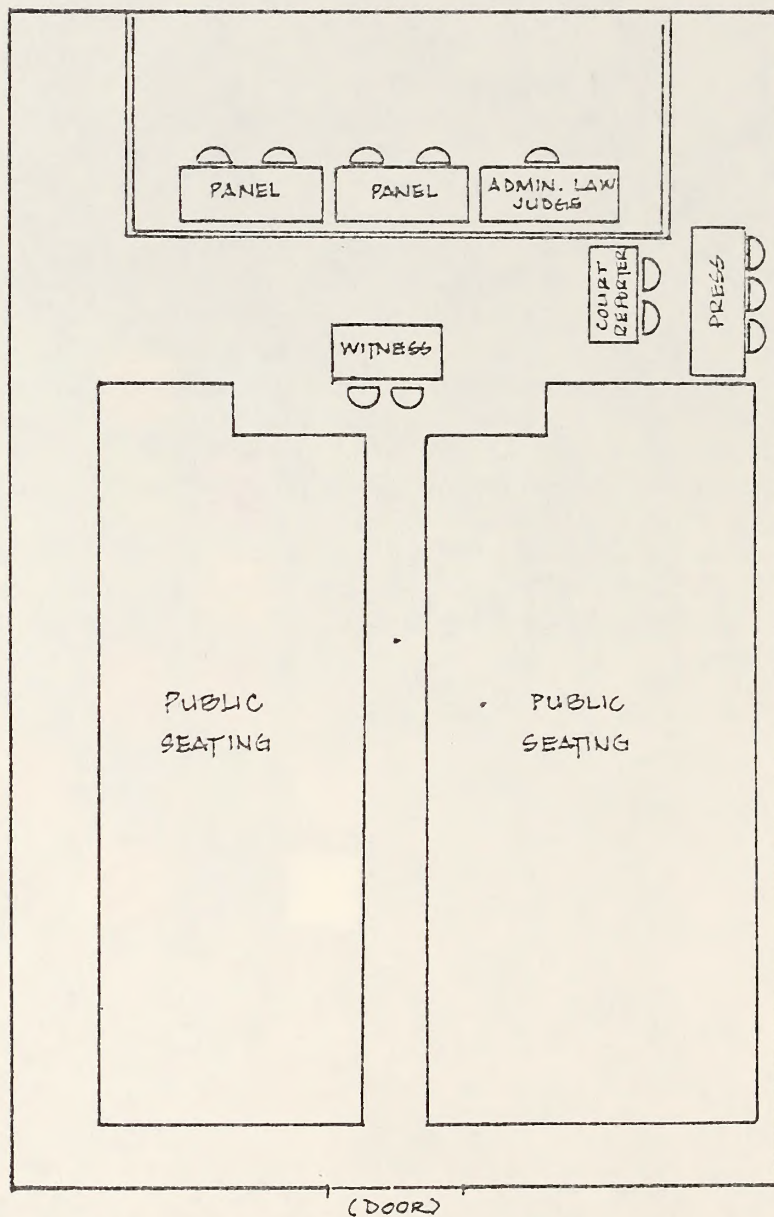
INTRODUCTION TO FOOTHILLS ABSTRACT

This abstract contains copies of selected pages from the complete text of the Draft Environmental Impact Statement on the Proposed Foothills Project. It is believed these pages contain the essence of the DES and include those items which are considered most significant; for example, metropolitan growth impacts (there are none predicted as a result of this proposal), impacts on surface water, and the relationship of this proposal to the Bureau of Reclamation's Upper South Platte Unit ("Two Forks"). Other material necessary for an overall understanding of the total project is included in summary form. No attempt is made here to generate new material or develop analysis in addition to or different from what is contained in the draft. The complete table of contents from the draft is included. All other items contained in the abstract are noted by an asterisk in the table of contents.

Copies of the complete draft environmental statement may be obtained by writing the Office of Public Affairs, Bureau of Land Management, Room 700, Colorado State Bank Building, 1600 Broadway, Denver, Colorado 80202.

Example 4-7

TYPICAL HEARING ROOM SET-UP



EXAMPLE 4-8

PUBLIC HEARINGS REGISTRATION FORM

For Public Hearings on the Draft Environmental Impact Statement on Development of Coal Resources in the Eastern Powder River Basin of Wyoming.

(Please Print)

TO: Rob Currier, BLM Environmental Statement Team, Hitching Post Inn,
1700 West Lincoln Way, Cheyenne, WY 82001

FROM: NAME _____

STREET ADDRESS _____

CITY-STATE _____ ZIP CODE _____

I wish to appear at the following public hearing and express my views:

Check One: _____ 7:00 p.m., June 24, 1974, Little America, Cheyenne, WY
 _____ 9:00 a.m., June 25, 1974, Little America, Cheyenne, WY
 _____ 1:30 p.m., June 26, 1974, Ramada Inn, Casper, WY
 _____ 7:00 p.m., June 26, 1974, Ramada Inn, Casper, WY
 _____ 7:00 p.m., June 27, 1974, Campbell County High School, Gillette, WY
 _____ 9:00 a.m., June 28, 1974, Campbell County High School, Gillette, WY

I intend to submit written documentation: Yes _____ No _____ Signature _____

Verbal testimony limited to 10 minutes; written testimony acceptable until July 18, 1974.

SECTION 5

STATEMENT CONTENT

In determining the arrangement and headings used in the environmental statement (ES), the following points should be kept in mind.

1. The purpose of the environmental statement is to assess the potential impact of the project on the environment.
2. Clarity is essential for the general public, reviewers, and decision-makers.
3. Not all public readers have an interest in all sections but many have specialty interests in a variety of environmental elements. One reader may specialize in wildlife, another in air quality, vegetation, or water resources. Others may be interested in the total interrelated impacts or system processes, such as energy flows.

BLM Manual 1792 offers basic guidelines for ES preparation, but the Interim Guidance provides a number of timeproven explanations and suggestions which can be of further aid to ES preparers. These suggestions will apply to the overview (preface), the eight required chapters, and the "Consultation and Coordination" chapter. Example 5-1 shows an example of an outline which can be adapted to most ESs.

It is important at the beginning of the project to insure that each author understands that he has to carry his assignment throughout the entire document. Each author must understand that he must complete his impact assessment and document the results in Chapter 3 (Impacts) through Chapter 8 (Alternatives) for each environmental element or issue for which he has the assigned responsibility. This will prevent having to backtrack later, trying to fill in omissions without having the relevant data and analyses.

OVERVIEW (PREFACE) (See 1792.44D)

Preparation of a preface is optional and is not normally required for most ESs (e.g., range management proposals). It is usually necessary for major, complex proposals (e.g., Kaiparowits powerplant). In either case, it is suggested that a brief paragraph on the purpose of an ES be included. When a preface is not prepared, the statement on the purpose of the ES can follow on the page immediately after the cover or signature page. When a preface is prepared, the statement of purpose can form the introductory paragraph of the preface.

It is suggested that the following statement of an ES purpose be utilized: "An environmental statement (ES) is a comprehensive document prepared in compliance with the National Environmental Policy Act of 1969 (NEPA), under guidance provided by the Council of Environmental Quality (CEQ), the U.S Department of the Interior, and the Bureau of Land Management. An ES does not recommend any particular course of action. Its purpose is to portray accurately the probable environmental impacts of a course of action and possible alternatives. The ES is an analytical synthetical tool that the decision-maker uses to help him weigh the environmental consequences of his decision. A public review period will be made available after the draft environmental statement (DES) is published to assess the technical adequacy of the DES. Persons wishing to provide written comment on the DES are given the opportunity to contact the appropriate responsible official by a given date."

The purpose of the overview (preface) is to provide the reader with a concise overview of what the ES contains, the project being assessed, and the probable impacts should the project be approved. It is an expansion of the summary page; however, it still remains brief and concise. It does not touch on the background of the proposed action. Much of the data it contains could be summarized from the preparation plan.

When prepared this section briefly covers the following items:

1. The scope of the statement - whether it is a broad programmatic statement or whether it covers specific projects;
2. The resources to be developed or managed;
3. The location of the resource, management proposal, and/or development;
4. The nature of the development - mining, power generation, etc.;
5. The party specifically requesting or proposing a federal action;
6. If applicants are involved, the reasons why they are in a position to develop or alter the resource (Are they leaseholders or lease applicants?);
7. The specific federal actions requested;
8. The agencies having authority for the project; and/or some aspect of it;
9. Specific geographic scope of the statement, why it was chosen, and topics for which the scope has been expanded and why.

The preface should be complete and stand alone, providing an introduction to the ES. However, it needs to be concise, conveying a large amount of information which is pertinent, at an appropriate level of specificity, in short space. Example 5-2 provides a good example of a short, concise preface which covers all the previously mentioned points.

DESCRIPTION OF THE PROPOSAL (See 1792.44E1)

The "Description of the Proposal," Chapter 1, contains several distinct parts and provides the data necessary to assess impacts. A typical structure for this chapter follows. A suggested outline for Chapter 1 of a range ES is shown as Example 5-3.

CHAPTER 1

DESCRIPTION OF THE PROPOSAL

BACKGROUND (if necessary)

PROPOSED ACTION (BLM's or an Applicant's)

AUTHORIZING ACTIONS

Federal Actions

Bureau of Land Management (BLM)

U.S. Forest Service (USFS)

Environmental Protection Agency (EPA)

Other appropriate Federal "agencies" with parallel and/or related actions.

State and Local Actions

INTERRELATIONSHIPS

Background

In many cases, there is a long background of past events leading up to the proposed project. The project location may have changed, as it was in the Kaiparowits powerplant project where the proposed plant site was changed between project conception time and ES starting time. In the Foothills water treatment project, the required rights-of-way had been issued prior to NEPA, yet later amendments created the need for an ES. Any such background facts need explanation in the document.

This section should also describe, in general, past actions which have led to the proposed action. Such actions would include previous construction of a powerplant or a reservoir on which the proposed project is dependent, previous mining, etc. The background section should not be unduly lengthy, but it does need to concisely present all the pertinent facts (see Example 5-4 for a sample background section).

Proposed Action (See 1792.44E1a)

The proposed action section includes sufficient descriptive details for the ES team members and all readers to understand the causes of impacts. This section should cover the following items: proposed objectives, location, timeframe, implementation stages, and discrete operations. The order of items covered may be altered and the use of subheads is not essential though it may be desirable. With the exception of the first two items, all items for each component (e.g., access roads, powerplants, transmission lines) should be covered in one place prior to discussing the next project component.

It is important that the proposal - whether bureau or applicant - (for site-specific assessment) or the projected development (for regional assessment) be described in terms of the federal action necessary for the proposal to occur; i.e., the proposed action should be described in terms of the federal action which enables the applicant's proposal and/or the regional action to occur. Describing the proposal in terms of the federal action is important since it is the federal action, which if taken, would set in motion the impacts "significantly affecting the human environment."

It is highly advisable for the proposed action to be written in as close to final form as possible prior to formation of the ES team. The proposed action should have been reviewed by the assigned W.O. coordinators for the ES prior to its use by the ES team. Having the complete description of the proposal in hand is essential to (1) focus the description of the environment affected, and (2) to enable the ES team to thoroughly analyze and synthesize the impacts of each discrete operation constituting the proposal. If the description is not available for immediate use, the team usually wastes considerable effort.

Project Purpose and Objective

The project purpose and objective(s) are extremely important. Defining them has the effect of fixing the range of appropriate alternatives because a prime criterion for evaluating potential alternatives is how well they fulfill the need which gave rise to the proposed action. Therefore, the purpose and objective(s) of the project should be stated carefully, clearly, and concisely. The purpose can be stated as the nature, quantity, and timing of the resources to be produced and the

objective as a description of the market or demand for these resources or resource management objective(s) to be achieved by the proposed action.

When an applicant is involved, the purpose of the federal action is different from the purpose of the proposed project. The purpose of the federal action is to allow the action requested by the applicant to occur.

Some example statements of purposes and objectives are listed below.

1. Applicant Proposal: The purpose is to mine 3 million tons of coal; the objective is to supply 1,000 megawatts of power from the Daily Power Plant to support an expected 3,000 population increase in the Dale City area.
2. Federal Proposal: The purpose is to provide 180,000 animal unit months (AUMs) for the immediate use of livestock, wild horses, and wildlife. The objectives are to improve vegetative condition from poor to fair on 30,000 acres and to decrease erosion from 100,000 tons per year to 20,000 tons per year on 45,000 acres.

Location

Descriptions and maps should show where the project and all project components are located. The relationship of the project location to major geographic points should be illustrated, particularly the relationship to state or local areas of importance.

Timeframe (timing)

Definition of the project timeframe should include the following elements:

1. When the proposed project would be constructed or implemented (season of the year when construction or implementation would take place should be specified);
2. How long it would take to construct or implement the total project; and
3. How long it would take to construct or implement each project component (e.g., access roads, power plant, transmission lines).
4. How long is the project life.

The timeframe should be described in terms of years, months, days, or whatever time span is appropriate.

Description of All Stages of Implementation and Discrete Operations in Each Stage.

In order to insure inclusion of all pertinent data in this section, it is often necessary to work closely with the applicant when the proposed action is a non-bureau initiative (see manual section 1792.41) or with the district office and/or planning personnel when the proposal is a bureau initiated action. The purpose of this section is to provide information so the reader will know exactly what aspects of the proposed action (e.g., discrete operations) would have significant impact on the environment. The action is described exactly as it is designed and as it is proposed to be operated or implemented.

In some circumstances, sufficient information may not have been supplied initially to adequately describe the proposal. When this occurs, the responsible official could decide to cease work on the ES until sufficient data has been supplied. In other cases, in order to complete the assessment, the team may have to develop a set of logical assumptions about how the proposal may be implemented. The latter approach is very risky and could result in wasted effort or a ES which would have to be completely revised at a later date. Each situation will be unique and resolution of the problem will depend on many factors which have to be approached on a case-by-case basis.

Construction, operation, maintenance, abandonment, blasting, clearing, travel to and from the site, hauling of raw materials, etc., should be described. (See manual section 1791.21D.) The description would explain how the proposed action would be implemented; for example, how the reservoir would be built, how the area would be cleared, or how the pipeline would be laid. Merely saying that a powerline would be constructed from point A to point B or that grazing would occur in the area is not sufficient. The ES should describe exactly what would occur and how it would occur.

The nature and extent (scale) of the proposed action should also be described in order to establish parameters for impact assessment. Typical items which should be covered are: Acres disturbed by the construction of each proposed component; acres to be covered by facilities; acre-feet of water to be utilized in construction, operation, and maintenance; units of materials utilized in construction; number of construction workers and permanent employees; and the size of the final project (e.g., acres of timber to be thinned, number of livestock, wild horses to be allowed, acres of brush conversions, miles of fence line, miles of road to be constructed). Artist sketches or photos of similar facilities can be used to help describe the various project components.

Some comparison data is required in Chapter 1 of the range ESs in order to provide a complete picture of the proposal. This should only occur in a tabular format. The existing AUM use levels and predicted changes should be shown alongside the proposed AUM use levels.

AUTHORIZING ACTIONS

A section on authorizing actions is required for non-bureau energy initiatives. In order to identify authorizing actions required before implementation of a proposed action can occur, a definition of an action is necessary. Any agency or entity has an action when it must approve all or part of the proposal by issuing a permit, grant, right-of-way, etc. Even though it is the required federal actions which trigger the need of an ES, many other actions on the state and local level are often required prior to actual project implementation. Unless the action has a "go" or "no go" effect on the project, then it should not be considered an authorizing action.

Generally a section on authorizing actions is not required for ESs which are prepared for bureau-initiated proposals (e.g., for range management proposals). Typically in such instances, the only action required is BLM's; actions by other agencies or bureaus are not required for the proposal to proceed. However, the occasion may arise where BLM's proposal would require a permit pursuant to Section 10 of the Rivers and Harbors Act of 1899 or Section 404 of the Federal Water Pollution Control Act from the Corps of Engineers. When this situation occurs, the Corps of Engineers' authorizing action has to be described. However, Chapter 1 of a statement on a bureau-initiated proposal should describe the actions the bureau would need to take to implement the proposed management program.

Federal Actions

It is imperative that this section clearly identify and quantify all federal actions which must be taken to allow the project to proceed. Each federal agency, bureau, or office that must take action should be identified and the necessary action (including the required timing) should be described. In some complex situations, actions may be required of many agencies, bureaus, and offices such as BLM, USFS, U.S. Geological Survey (USGS), U.S. Fish and Wildlife Service (USF&WS), Environmental Protection Agency (EPA), Bureau of Reclamation (BR), Bureau of Indian Affairs (BIA), and Army Corps of Engineers (COE).

It should be stressed that a description of the steps involved in the authorizing actions is required; simply identifying the requisite actions is not sufficient. Other involved agencies are requested to supply the information required. The ES team then insures that the statement adequately covers other agency, bureau, or office concerns so that those agencies may utilize the statement as a basis for proceeding with respective parts of the action (See Example 5-5 for a sample of the

federal action part of the "Authorizing Actions"). Also refer to the Foothills ES (DES 76/2) prepared by the Colorado State Office.

The federal action section applies only to agencies, bureaus, and offices with the decision-making role defined previously. Those agencies, bureaus, and offices which have a review function or a secondary report preparing function based on jurisdictional responsibilities must be consulted and their recommendations considered. (For example, the U.S. Fish and Wildlife Service must be consulted about the requirements of the Endangered Species Act and the Wildlife Coordination Act.) The results of these consultations are handled according to the instructions included in the W.O. Instruction Memo No. 78-162.

State and Local Actions

This section identifies any state and local governmental actions which would be required before the project could be implemented. These actions are especially important when part of the applicant's proposal is located on state and private land. State and local actions should be identified using the same criteria as explained previously under the federal action section. These actions are normally not assessed unless a joint federal-state ES is being prepared, but it is important to identify the full spectrum of actions that would be necessary prior to project implementation. These other actions provide a basis for mitigation measures that could be imposed on the applicant in addition to those which will be imposed by federal entities. Knowledge of all possible mitigating measures is critical in developing the assessment of unavoidable adverse impacts. Some examples of state and local actions are: Grantings of rights-of-way across state land; issuing stream discharge permits where delegated from EPA; acquiring land and selling it to the applicant; issuing air pollution control permits; etc. In some cases, the state may be proposing a related action which does require assessment in the ES. This was the case in the Kaiparowits ES where the state planned to build a new highway to service the plant area.

INTERRELATIONSHIPS (See 1792.44Elc)

The interrelationships section describes how the proposed action interrelates with existing or proposed federal, state, local, and private projects, plans, and policies in the area of influence. One of its purposes is to examine how the proposed project fits into the total land use plan, as expressed in these other plans, for the entire area. The timing of the proposed project in relation to other ongoing projects could have an effect on cumulative impacts of the proposed project, especially in the socio-economic conditions sector.

In order to concisely portray the information required in this section, a two-level approach is suggested; i.e., planning relationships and other project relationships. The planning relationship portion

should be divided into two parts; i.e., with other agency plans and with BLM plans.

Understanding of the relationship between the proposed and other agency plans or management is critical for bureau initiative statements (e.g., range and forestry). The relationship between an operator's grazing on BLM land and his use of Forest Service land could be a key factor in determining total and cumulative impacts of the proposed action. The exact relationship between the two has to be described.

It is also essential to describe the relationships between the proposal and the management framework plan(s) (MFPs) for those proposals which are an extension of the bureau's planning process (e.g., range and timber management proposals). See Example 5-6 for one way of approaching this task. This part also includes a description of how the land allocation portion of the proposed action was derived. The description should indicate land uses foregone to permit the use for the proposed action (e.g., recreation values foregone in favor of timber production; wildlife values foregone for the production of livestock). The relationship between the proposal and the MFP objectives and decision for the area is to be described. How the proposal relates to achievement of the stated MFP objectives ought to be discussed. The relationship of the proposal to other activity planning accomplished or proposed for the area is also described.

The second level of description for this section deals with the relationship between the proposal and other existing, proposed, or predicted projects in the area. These other projects would be those which do or could have similar impacts on the environment and could result in overlapping impacts which when assessed together might have a significant cumulative impact on some segment of the environment.

The most frequently occurring fault that has been found with the interrelationships section is that it describes the MFP objectives, as well as other plans and the projects, but fails to clearly identify and describe the specific relationships between the proposal and the other actions. Too often it also has failed to describe how or in what manner the proposal was designed to meet the specific MFP objectives.

Some impact subjects to be considered are: The possibility of combined air quality effects, overlap of manpower requirements, similar or overlapping construction periods, and actions which could affect the proposal (e.g., cancellation of grazing permits on adjacent Forest Service land). The key points to keep in mind are how each project does or does not fit together with other proposals and how conflicts which would worsen the potential environmental impact of the proposed action might possibly arise. Compatibilities among proposals that would have synergistic effect or beneficial impacts should also be noted. Data developed in this section is used in assessing cumulative impacts in Chapter 6 (see 1792.44E6).

DESCRIPTION OF THE ENVIRONMENT (See 1792.44E2)

The basic guidance for this chapter is well documented in the previously noted manual section. The purpose of this chapter is to describe the environment that would be impacted. It is not necessary or desirable to describe parts of the environment that are not impacted in an important way or do not play an important role in the impacts assessment process. Use of graphics (charts, tables, maps, photographs) should not be overlooked as ways to present the data and reduce the amount of text.

Existing Environment (See 1792.44E2a)

The existing environment section describes the environment or the baseline conditions in the area of concern as it is today. Authors should be sure to include a description of areas which are or have been altered by projects currently in progress. For example, if an existing mine has disturbed 3,000 acres of vegetation, the disturbed area should be noted on the vegetation map. The ES team should not focus on what caused the environmental elements or the entire system to be in the condition they are today (e.g., past grazing practices should not be described). The important task is to describe items as they currently exist. Information concerning the past factors which have through modification of the natural ecosystem brought about the existing environment may, however, be useful in supporting the assessment of impact resulting from continuation of the present situation. For example, information on the effects of past grazing practices can be helpful in assessing the effects of present grazing practices for the no action alternative and could be used in that part of the ES. This material should not appear in Chapter 2 because describing historical trends adds unnecessary data and tends to cloud the real issue which is the condition of the existing environment. Such material should be placed in appendices if it would aid the reader's understanding of environmental impacts.

If vegetative disruption or change would occur as a result of the proposal, the potential capability of the environment to produce vegetation should be described. This is a necessity for range ESs. Depending on the information available and the type of impacts expected, a description of potential streambank stability and riparian vegetative condition may also be useful. The description of potential productivity and capacity is useful in establishing a framework for describing the significance of impacts and for supporting predictions of changes brought about by the proposal.

It is most important to clearly identify critical environmental elements for the public, as well as for the decision-maker, in order for them to be able to obtain the entire picture of the existing conditions, and to be able to assess impacts. Where project components (e.g., power plant, coal mine, transmission lines, etc.) are located in different environments, then it is necessary to identify these areas of concern and describe the environmental elements for each of the areas (see

Kaiparowits FES 76/12 prepared by Utah State Office). When project components are grouped together, a logical area for descriptive purposes can be established (see Foothills DES 76/2). Descriptions also need to be related to allotments in the range ESs.

Data Gaps

In some ESs data for certain environmental elements may be deficient. It must be recognized that data gaps can only be identified when the level of information necessary to adequately assess the impacts of a proposal is known. However, there is no specific guidance defining adequate levels of resource inventory and assessment data for specific ES proposals. Therefore, each team member must utilize available guidance as well as state-of-the-art knowledge to determine which data may be essential for each impact assessment. For example, when preparing an ES, it is found that there is no inventory information available describing the percent fish species composition of a stream. However, when an evaluation of the proposed action reveals that there would be no impact on that stream, the lack of information on fish species would not be considered a data gap. If the proposed action significantly impacted the stream, then the lack of species composition information could be considered a data void. Any gaps between the level of existing inventory and assessment data and the required levels must be clearly identified and stated in this part of the ES.

Emphasizing Description of Environmental Elements Likely to be Impacted

The description of the existing environment emphasizes the features most likely to be impacted by the proposed action. This does not mean that a detailed impact analysis is prepared prior to writing this chapter. A quick preliminary assessment can determine the environmental elements most likely to be impacted and therefore the ones requiring the most description. The assessment is best accomplished by the entire team as a team effort utilizing the interdisciplinary approach. (See 1791.11D.) The environmental assessment worksheet, 1791, Illustration 2, is a good tool to use in developing a preliminary impact assessment. The environmental digest (1791, Appendix 2) provides a handy checklist for identifying key environmental elements. Other types of checklists, matrices, etc., may also be used to initially identify areas of major concern.

NOTE: Upon completion of a detailed impact assessment (Chapter 3 of the ES), Chapter 2 needs to be reviewed to determine if additional data needs to be added or if extraneous data that was included can be eliminated or reduced. In some specialized cases, it may be determined that the environment (present and future) of the proposed action, and of the alternatives, can be adequately described within other chapters of the ES. The determination that a special

chapter on the description of the environment is not needed must be made in concert with the BLM statement coordinators (WMS-DEA), Office of Environmental Project Review, and the Solicitor.

The relationship between determining the major impacts and deciding which elements to stress in the environmental description cannot be overemphasized. The thrust of the statement should be to confront the major impacts and deal with them thoroughly. Summary descriptions should be provided for environmental elements and systems that would not be substantially impacted. Wherever necessary, new elements should be added to the outline and/or the amount of discussion devoted to unimportant elements reduced. The outline is considered a flexible tool in this regard. If promising alternatives are located in the general vicinity of the proposed action, Chapter 2 should also emphasize the environmental elements and systems that may be impacted by these alternatives.

In the socio-economic section, the description of attitudes and expectations (see 1792, Illustration 10) may be on a group-by-group basis if attitudes and expectations differ greatly among groups or among strata. For an example, see Fort Mojave Land FES. Where significant and unique individual viewpoints are identified, they should be noted separately. The environmental digest in 1791 identifies some items to be considered for this discussion.

Threatened and Endangered Species

The sections describing plant and animal life should include all potentially impacted species which are listed as endangered or threatened, are in the process of being listed, or are potential candidates for listing under the Endangered Species Act of 1973. All species listed under any state act (and/or list) should also be identified and described if they would be impacted by the project. The status of formal consultation procedures, if required, should be stated. This task is best accomplished under a separate subheading in the vegetation and wildlife sections.

Wilderness

This chapter must contain a discussion of existing and potential wilderness resources that might be impacted by the proposed action. Potential study areas should be identified and the status of the inventory indicated. If this is a data gap, it should be so identified. Discuss this subject to the extent that the data allows. This subject should be handled as a separate topic on the same order as recreation resources. It also has to be carried through the rest of the ES chapters.

Future Environment (See 1792.44E2b)

This section is written to provide the baseline data for assessing the impacts of the no action alternative. It is also used to provide the baseline data for assessing the impact of a series of proposed actions scheduled for implementation over a long timeframe (e.g., required development of phosphate mining scheduled over a period of 15 years). The assumptions used to prepare this section must match those used to prepare the no action alternative.

The scope of the future environment section is determined by the part of the proposed action that must receive federal approval before it can proceed. The future is described, based on the changes expected to be caused by other actions occurring or expected to occur in the area, without implementation of the federal proposal. For range ESs, the future condition of vegetation would be described on the basis of continuation of the present level of livestock use. The other projects and activities used in describing future changes are those described in the interrelationships section of Chapter 1.

The amount of description will depend on the significance of the proposed federal action and its relationship to the development of the area. When any part of the proposed federal action acts as a trigger to total development (i.e., development would not occur without the federal action), the description of the future could conceivably be limited to one paragraph which says that few or no changes are expected and explains why. However, all planning documents (federal, state, local) must have been checked to determine that no other major changes in land use are planned which would create environmental changes in the future on or over the subject area. This search must be documented. The text should indicate that natural ecosystem changes would still occur but prediction and quantification of these is limited by available data and techniques. Those writing this section should not forget that air quality and socio-economic conditions should change due to other developments in the adjacent area. The description should not indicate a totally static environmental state of the area unless this is indeed a rare case in which dynamics cause no changes.

When any part of the proposed federal action is not the trigger to development (i.e., development would occur regardless), then the future would be described, based on other predicted development (by other governmental entities and private) predicted to occur. The description would relate to the description of the proposed action, existing environment, and potential impact areas (see 1792.44E2b). It may be anticipated that direct onsite changes (on federal land) may not occur but possible changes in air quality and socio-economic conditions caused by action in the surrounding area should not be overlooked. These changes should

be described if they are expected to occur within the identified time-frame. Only those environmental changes affecting the public lands which would be impacted by approval of the action should be identified and described.

Expected changes should be quantified as much as possible. Levels, degrees, and modes of change are expressed as exactly as possible. Gaps in data and the range of uncertainty in predictions should be noted. The task in this section is to describe what the environment may look like at some future point. It is not necessary to detail the causes of environmental change. Think of this section as stepping forward in time, taking a snapshot of the environmental elements and systems, then describing in words how they looked. As nearly as possible, conditions need to be described in the same terms used to describe the present environment. Use of tabular data, charts, and graphs is encouraged.

The time point when the future environment should be described depends on the time at which the major changes in the environment caused by the proposed action have occurred (e.g., water quality reduced to the maximum extent that would occur with the proposal) or are occurring (e.g., air quality degradation at the maximum point that would result from implementation of the proposal). Another way of defining this point is the time at which the changed environmental conditions resulting from the proposed action have reached an apparent new level of equilibrium. For physical projects (e.g., power plant project) this could be the time at which all phases of the proposed project are operating at their designed capacity. In the case of projects involving a degree of land management (e.g., the range program), base the timeframe on how long it would take to fully achieve the objectives of the management program (e.g., 15, 20 years, etc.). The selected timeframe is identified in Chapter 1 of the ES. In some instances this is not adequate for description of future conditions. In regional ESs, when cumulative impacts are being assessed at a series of time points, the description-of-the-future section also has to consider these same time points. This is necessary in order to establish the baseline conditions for that time point on which to base the impact assessment, which is critical when assessing cumulative impacts of a multitude of actions.

The major point to keep in mind when preparing the future environment section is that it is not an impact assessment, but only a description of what conditions are predicted to be. The introduction to the future section needs to establish the assumptions used in describing the future.

ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION (See 1792.44E3)

Assumption and Assessment Guidelines (See 1792.44E3a)

The assumption and assessment guidelines contain the pertinent statistics and assumptions needed to guide the impact assessment. This

section should not be loaded with complex statistics which do not have a bearing on, or are not needed for, assessing impacts. Example 5-7 illustrates part of this section.

If necessary, the reasoning and data sources supporting a particular assumption may be given. This type of discussion is needed to provide the reader with sufficient knowledge to draw his own conclusions as to adequacy of data and of the analyses and syntheses.

Impact Assessment (See 1792.44E3b)

An impact of the proposed action may be defined as any resultant change in the existing or future environment that can be described in terms of magnitude, intensity, duration, and incidence. These impacts result from effects which result from causes identified in Chapter 1.

To clarify the difference between effects and impacts and to prevent the assessment process from stopping at the identification of effects, the following definitions are offered.

Effects - changes or permutations caused by the proposed action, but not the final or ultimate change for that specific environmental element, subelement, or system aspect.

Impact - the final or ultimate change in an environmental element, subelement, or system aspect; this change is determined by tracing all cause-effect paths generated by the proposed action. For example: (1) power plant emissions (cause) are deposited in the air, on the ground, and on vegetation (effect), which in turn may reduce (impact) air, vegetation, or water quality (baseline conditions) which in turn could impact animal life (including humans); (2) grazing (cause) changes vegetation composition (system aspect) from browse species to grass (effect) which reduces the number of mule deer (environmental element) the area can support (impact on wildlife).

Impacts which result from any project component are traced and assessed wherever they occur. This tracing of impacts through the ecosystem has to continue until the resulting impact is no longer significant or cannot be associated or linked with the proposed action. The impacts are quantified based on the assessment and the author's professional judgement to predict what the impacts could be, based on the knowledge he does have. However, that professional judgement should be supported by any studies and references used as a starting point for estimates or guesses.

Data Gaps

When true data gaps are noted in the description of the existing environment (Chapter 2), these data voids and their effects on the impact assessment and resulting implications for the decision-maker should be

described in the appropriate section of Chapter 3. The implication on the decision will vary depending on the data void and the criticality of the potential impact.

For example, the description of the environment indicated that prairie dog towns are located in the project area and that evidence indicates (past sightings) the probability of occurrence of black-footed ferrets. However, an inventory has not been conducted to substantiate the occurrence. The assessment process indicates that the project would impact (destroy) the prairie dog town and therefore would impact the black-footed ferrets, if they were there. The ES should state: "The magnitude and severity of the impact on the black-footed ferret cannot be quantified or accurately predicted because population numbers and actual occurrence data are lacking." The ES should also make clear the implication of this lack of knowledge for the decision-maker, which for a proposed right-of-way grant would be that it could not be issued until the inventory data gap was filled and a reassessment of potential impacts completed.

Identifying and Quantifying Impacts

Identifying and quantifying impacts is usually easier than defining their significance. The interdisciplinary approach not only is required (1792.44E3b(2)), but it also is the best way to approach the task of assessing potential impacts. An interdisciplinary team approach is defined as a group of specialists representing different disciplines working together to identify, discuss, and learn more about the various aspects of a common issue or problem. The key to the approach is working together as a team and approaching the problem collectively. Frequent team sessions and in-depth discussions are necessary. Complete sharing of information between team members is required. Often, during team discussions, information and ideas brought up by one person generate a secondary line of thought by someone else. This process may lead to the identification and assessment of impacts which otherwise could have been overlooked. Team discussions also tend to keep a person objective and prevent his biasing his assessment to reflect personal likes and dislikes. Remember that an impact that is beneficial to one interest could be in some way adverse to another.

The following assessment process may be helpful in determining impacts.

First, estimate how each component of the project will directly affect each part (entity and dynamic) of the environment. A component of the project can be defined as a discrete operation or a group of operations conveniently similar in nature and impact (e.g., grazing system component of a range management proposed action which consists of grazing systems, range improvements, vegetative manipulation and elimination of grazing).

Second, estimate the direct impact of the whole project on each part of the environment. This task will require more than a simple summation of the impacts of the components developed in Step 1. Impacts will probably vary with time, e.g., time of month, season, or phase of implementation (construction, operation, or abandonment). Impacts may also interact in a nonlinear fashion requiring synthesis to understand their significance. Initially, the important point is to determine the total direct impact on each environmental element.

BLM Form 1790-3, Illustration 2 in BLM Manual 1791, shows the kind of matrix that can be used to perform the two steps described previously. Full use of the remarks column will greatly assist the author in documenting the analysis and the results thereof. This chart can be expanded for use on a blackboard, flip chart, or whatever visual mechanism is appropriate to accomplish the specific task at hand.

Third, to place the assessment approach in the proper context, the area being impacted should be considered as an interrelated whole. The team should recognize that any impact on or change in one environmental element can alter other elements or can change ecosystem structure, functions, and processes. The assessment methodology used at this stage of the assessment procedure should employ synthesis rather than analysis; that is, it should define relationships among environmental elements and relationships between environmental elements and larger aspects of the ecosystem rather than focusing on each environmental element in isolation. For example, if a proposed action involved clearcutting, the analytical stages of the assessment procedure would identify the amount of timber cut, the size of the area affected, and the plant communities impacted. Stage 3, the synthetical stage, would note the effect of clearcutting on nutrient cycles (an ecosystem process) and identify the resulting impact on soil fertility. A cause-and-effect web identifying other impacts, such as loss of wildlife habitat, would be developed.

In addition, the total impact (e.g., additive and synergistic impact) of the project and/or all related projects on the total environment has to be assessed through the previously described process before the assessment of impacts is complete. Impacts must be traced from one group of environmental elements to another until the resulting impact becomes insignificant. For example, mining removes vegetation, loss of vegetation impacts wildlife which impacts recreation use and human values; loss of vegetation also affects erosion rates, which changes sedimentation rates, which impacts water quality, which impacts aquatic life, which impacts recreation use and human values. In an actual case, of course, the chain of events will be a complicated web, and impacts must be described and quantified with as much precision as possible. The important point is to determine the total impact on each element from changes in all other elements which may affect it. Example 5-8 shows one example of an interrelated web of cause-effect-impact tracing.

The analysis of impacts for each environmental element must be cross-referenced (see 1792.44E3b(5)) with other elements which may be impacted. (Refer to the previous cause-effect impact relationship provided in this section.) The ES section which only surfaces the impact does not deal with the impact in full detail, but does mention it. The author must insure that appropriate specialists are aware of the impact and that it is assessed in the proper section. In some cases, a joint effort is required of several specialists in order to complete the full assessment of impact on related environmental elements. One example concerns the vegetation and wildlife specialist working quite closely to develop the assessment of impacts on vegetation (which includes browse, riparian, aquatic) and wildlife (populations) for range ESs.

Therefore, team members must interrelate their assessment of impacts. For example, the person handling the analysis of socio-economic impacts may determine (by inductive reasoning) that the project would cause a large increase in population and that it could impact wildlife habitat, water usage, recreation values, etc. To facilitate this interrelating, it is useful to characterize (separately) the various aspects (magnitude, intensity, duration, incidence) of each impact. Except where population increase impacts other socio-economic factors, such as schools, the author of the socio-economic analysis stops at the point of identifying the possible impact on other environmental elements, upon being assured that other authors will continue the impact tracing. For example, the person analyzing recreation impacts must be made aware of the population increase so that further detailed assessment can determine impacts on recreation values. The wildlife analyst also must be made aware of population increases because this change could impact wildlife. The process of establishing interrelationships among environmental elements must continue until Chapter 3 is completely integrated (synthesized); that is, it assesses, discusses, and traces all impacts and their relationships among environmental elements and reaches a bottom line conclusion about impacts on the total environment.

Standard forms and charts are only tools for discovering and quantifying impacts; they cannot be relied upon as an exhaustive checklist of possible impacts. All significant impacts (see later discussion on determination of significance) must be identified, quantified, and traced through the environment. Graphic aids to the author cannot completely substitute for a thoroughly written assessment. In most cases, charts and forms should be placed in the appendix of the ES if relevant to understanding the impact assessment.

On the other hand, the statement need not and should not present an exhaustive assessment of all possible impacts, however small. What is required is a hard look--a thorough search--for impacts and an assessment which concentrates on the significant impacts and treats minor impacts with less detail. The tracing process is intended to illustrate the fact that remote impacts may not be omitted if they are substantial, singly or cumulatively.

Studies and other research which support authors' statements and conclusions are not placed in the text. If they are not readily available, cannot be made available to reviewers upon request, and are needed to clarify the text, they are included in appendices. The text refers to such information and summarizes it in whatever detail is necessary to understand the conclusions presented in the text.

The impact analysis includes a thorough discussion of secondary (or indirect) impacts, as well as direct impacts. Secondary impacts are those caused by development or other activities which are not a direct part of the proposed project but which would probably occur if the project was implemented. Primary (or direct) impacts are those resulting from activities directly associated with the project (e.g., the loss of vegetation, soil erosion, water pollution, or air emissions caused by constructing a power plant).

Some examples of secondary impacts are: (1) the need for additional infrastructure facilities (e.g., schools, houses, and sewer plants) generated by an influx of construction and operating personnel, (2) additional industry attracted to the project vicinity and its attendant impacts, (3) shift of employment from other sectors, which would impact sectors losing workers, and (4) increased population required to provide services for the workers associated with the project. These changes will, in turn, place additional demands on natural resources thereby creating another set of impacts which has to be considered in the assessment process.

The general rule for tracing and assessing impacts is to trace them to the point that they become insignificant or to where their association with the proposed project cannot be definitely established. In all cases, the assessment process must state how the environment would be impacted. However, reasonable predictions must be made. For example, it should be fairly clear how many people will be required to operate a mine and power plant project. They must live somewhere, and the expertise is available to predict where they will probably live (or where they should live, if a new town is necessary) and to estimate the totality of services they will require. The point here is that secondary impacts may not be omitted just because they are secondary; the focus should be on major impacts, whatever the kind. What is needed is an accurate picture of all the important changes likely to flow from the project.

Supporting and Documenting the Assessment Process

Impacts are quantified or described as precisely as possible. Vague or general terms are not acceptable. If an impact is not well understood, a range of likely impacts can be stated. Making conclusive statements such as "the impact is not significant," without objective data to back up the statement or in the face of data which suggest a contrary conclusion, are the hallmark of an inadequate statement. The

courts have been particularly strict about the requirement to provide support for conclusions drawn.

The statement must set forth (see 1792.44E3b(1)) the assessment processes used to identify, trace, and quantify impacts; the explanation should be sufficiently detailed so that the reader will understand how impacts were determined. The document should not just state the results of that process. An informed layman should be provided with enough data to judge independently the likelihood, extent, and importance of the impacts described. The assessment/synthesis process documents all stages of the effort starting with the project proposal and ending with impacts. However, detailed methodologies are located in the appendix while the results are concisely summarized in the text. The courts have emphasized that a prime function of an impact statement is to enable persons not connected with the project to perform an environmental review and reach an independent conclusion concerning the environmental trade-offs.

The impacts chapter needs to begin with a brief introduction explaining: (1) the assessment procedures, (2) that the chapter discusses all impacts (primary and secondary) prior to mitigation, (3) that the impacts were assessed based on standard operating conditions and the proposal as designed and described in Chapter 1, and (4) any specific conditions. This introduction would form the first part of the assumption and assessment guidelines section.

The impact assessment needs to answer the following questions.

1. How: By what means will the impact be caused? Link the causes described in Chapter 1 to direct effects and relate changes in environmental elements to resultant changes in other elements. For example: (a) The removal of coal during mining would decrease the elevation of the land surface in varying degrees thereby increasing or decreasing the slope of the land. The removal of overburden to reach the coal would result in complete alteration of soil horizons, parent material, and soil characteristics, and until revegetation is complete, the removal of plant cover. In combination, these effects would alter and, typically, increase erosion; (b) whenever cattle are concentrated in a pasture from May 1 to middle or late July (average annual total of 133,000 acres affected), ground and shrub-nesting birds (e.g., sage grouse, curlews) would be impacted through trampling of their nests and a resultant loss of eggs.
2. How Much: All impacts must be quantified as precisely as possible using measures appropriate to the resource, element, system, or process impacted. Where precise quantification is not possible, the magnitude and/or the intensity of the impact should be described as precisely as possible in quantitative terms. Where impacts are uncertain, the range of possible

impacts should be given. For example: Construction of the proposed railroad would result in destruction or disturbance of up to 3,900 acres of big sagebrush and grass; implementation of the four-pasture rest rotation system on 40,000 acres would improve the browse (graze) condition from poor to fair on 3,000 acres and from fair to good on 37,000 acres as a result of the change in vegetative composition from sagebrush to grass, and sage grouse populations would increase from 500 to 700 birds.

3. When: What is the year, season, phase of implementation of the project; incidence and duration of the impact? For example: Topsoil disturbance per 5-year period accelerates from 2,700 acres in the 1974 to 1980 period, to 5,000 acres from 1980 to 1985, and 6,300 acres from 1985 to 1990. Removal of vegetation along the railroad right-of-way would begin as soon as the ground surface is dry enough to allow operation of large equipment and would continue for 3 to 4 months. Loss of vegetation would continue for 1 to 1-1/2 years until rehabilitation occurs.
4. Where: The location of the impact must be described and/or shown on maps. For example: The water of Caballo Creek and Coal Creek would be adversely affected during the construction of road and railroad bridges. (See map for crossing points.)
5. Significance: Adequately evaluating the significance of a particular impact is a difficult problem. Unless well substantiated, statements such as "this impact is not significant" are neither helpful nor required. Some suggested approaches are:
 - a. Develop explicitly stated standards for measuring significance. For example: Total suspended particulate concentration would exceed 90 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) in subregion A, which is 15 $\mu\text{g}/\text{m}^3$ over the National Ambient Air Quality Standard (NAAQS) of 75 $\mu\text{g}/\text{m}^3$.
 - b. Quantify in terms of absolute and percentage changes whenever possible. For example, the statement "100 acres or 0.1 percent of the grazing land used by local ranchers would be permanently removed from production" states the absolute impact (100 acres), the percentage of all grazing land appropriate for consideration, and the standard used for comparison (grazing land used by local ranchers).
 - c. Specify the ways in which the impact is most significant. For example: (1) Destruction of the surface by mining may have little impact on grazing by domestic livestock, but substantial impact on an endangered species must be discussed. (2) The loss of the 1,000 acres of sagebrush

although it is only 0.1 of 1 percent of the total area is critical because it eliminates one of the only known sage grouse strutting grounds in this region.

- d. Assess an impact from the point of view of its importance in the whole web of impacts the project creates, its significance may be impossible to appreciate in isolation. Ask how the situation might change if the impact and all those that it causes were (hypothetically) eliminated. The onsite impacts (direct) of the project may be minor. However, the increase in population that would be caused by the project could place a severe stress on other critical environmental elements that are close to being destroyed (endangered species habitat) or are close to exceeding standards (air quality problems).
 - e. Focus discussions of significance on groups or categories of impacts--the overall impact of the project in general areas. The total effect of a number of minor impacts may be substantial. The impact on various wildlife species may be minor. When viewed as an aggregate on the entire area of wildlife population, they may become significant due to reduction in area diversity and the interrelations existing between various species, especially prey species. Some combinations of effects may result in synergistic impacts.
6. How Likely: When the assessment cannot definitely establish that a particular impact would occur if the proposal is implemented, the discussion can be qualitative or it can make use of probability percentages or confidence levels. This aspect of the impact assessment is especially critical when the team is considering impacts which would result from failure of project design features. Some indication of its likelihood should be given for each impact.
 7. How Do You Know: The entire process of identifying and quantifying impacts must be documented to the extent that a reader unfamiliar with the project can understand how the various factual conclusions in the text were reached so an expert in the field under discussion can evaluate the methodology and criticize the results. Detailed analyses, syntheses, or studies should be included in appendices or made available upon request. The text should sketch the methodology, present the more important conclusions, and refer the reader to appendices or studies for more information; however, the text should read intelligibly without reference to these sources. In general, the kind of information and the level of detail included should be keyed to

what is necessary to understand and form an independent assessment of the character, significance and likelihood of the impacts. In some cases, the author will have much more data available than is necessary; extraneous data must be omitted for the sake of brevity and clarity. There may be other areas where insufficient data is available, and studies must be completed before the statement can be written. When major impacts are poorly understood, extensive research programs may be necessary in order to adequately assess the impacts and the advisability of proceeding with the project in its proposed form. One example is the Challis case where additional inventory and a second ES was required prior to decision-making. In all cases, remaining significant gaps in the data must be mentioned.

The basic philosophy for the impacts chapter is that it must, essentially, stand on its own. Sufficient material from Chapter 1 and 2 should be repeated, at least in summary form, so that Chapter 3 reads intelligibly by itself and extensive cross-referencing is not necessary. However, unnecessary duplication should be avoided. Reference to major passages, when necessary, is preferred to repetition. For example, it is not sufficient to say that the impact would be removal of 500 acres of vegetation as described in Chapter 2. Chapter 3 must identify the type of vegetation to be removed as well as the amount. Where maps were used in the description section to show the location of items, such as soil types, vegetation types, streams, etc., maps can be used in Chapter 3 to show the location and amount of impact. For example (underlined items are repetitions): 'Population would triple from a 1970 total of 12,597 to a projected 1990 level of 50,400; approximately 0.6 percent (29,000 acres) of agricultural land (4,600,000 acres in 1970) would be disturbed and lost to production by 1990; the total vegetative acreage to be removed by type is shown in the table which also lists total undisturbed acreages by type.

Overview of Steps in the Assessment Process

A possible sequence of steps in the assessment process is listed below.

1. Understand the purpose of the project and all its functions and operations.
2. Establish parameters based on known or assumed data (Example 5-7).
3. Determine the stages of implementation of the proposed project and each discrete operation within each stage.
4. For each stage of implementation, compare each discrete operation against each specific environmental component (EAR Worksheet, 1791, Illustration 2).

5. Determine if an impact is possible and assess the impact based on design specifications and standard procedures.
6. Determine the total direct impact of the project on each environmental component.
7. Determine the total direct impact of the project and of its components on the ecosystem it impinges and on the unit system that is its human environment.
8. Identify all further impacts of the project by tracing impacts wherever they lead.
9. Compare impacts resulting from the project with federal, state, and local standards to determine if the impact exceeds the standard.
10. Document the assessment in the narrative using the questions in items 1 through 9.

Notes of Caution

1. Do not state conclusions without supporting them (with reference to data or assessment procedures). The assessment must be documented.
2. Do not draw conclusions as to project feasibility or desirability.
3. Utilize assumptions if necessary, but be sure to document them in the first section of the impacts chapter.
4. Be specific and quantify wherever possible but recognize that quantification is not always possible and that it is just as important to recognize impacts that could occur but are unquantifiable, using available data and techniques.

MITIGATION (See 1792.44E4)

The mitigation chapter is not simply a listing of applicable laws and regulations. In fact, such is not even necessary because it is not the law itself which mitigates but the actions taken under the law or regulation. Therefore, this chapter identifies, by agency, the specific actions which will be required, the impact which the measure should mitigate, how it should mitigate, and to what extent the impact should be mitigated. The mere existence of a requirement does not lead to a conclusion that mitigation will in fact occur. Something must be done to implement the requirement in the specific context of the proposal.

The specific mechanism is identified and analyzed in detail to determine whether it will have the desired mitigating effect on the environmental impact involved.

The manual section cited provides the basic guidance and overall philosophy for preparing this chapter. Clarification and suggestions for preparation are given here. The following procedural rules apply to preparation of this chapter.

1. All mitigating measures have to be real and committed. To be real the measure has to be legally enforceable and actually workable for the area and situation being assessed. Committed means that the agency requiring the measure will insure that it becomes part of the authorizing document and, furthermore, will take the necessary steps (e.g., committing manpower for supervision) to see that the measure is actually implemented on the ground. To implement the first step (i.e., to make sure the measures are legally enforceable), the best suggestion is to involve the local solicitors office whenever there is any doubt about their enforceability. To insure commitment, the technique that has successfully been used in several instances is for the ES team to prepare a list of measures (based on impacts identified in Chapter 3) and have them reviewed by the District Manager and/or State Director to determine which ones will be applied and included in the authorizing document as stipulations. Once this is accomplished, then the remaining steps required in this chapter can be completed.
2. Each measure has to be related to a specifically identified adverse impact in Chapter 3. In many instances, during review of the initial stages of the ES, it is discovered that measures have been included to mitigate an impact that was not assessed in Chapter 3.
3. Each measure is analyzed as to its possible effectiveness in reducing the identified impact. This analysis should disclose the amount of the impact which could be reduced by applying the mitigation. It is not enough to merely identify the desired effect of mitigation without performing this detailed analysis of its probable effect (see effectiveness part of Example 5-10). This analysis should include a survey of how well similar measures in like environments have worked in the past if there has been previous experience with the measure. If the author has better expectations for the measure than seem likely from past performance, he has to justify his conclusions.
4. Stipulations are not developed in this chapter. Stipulations are more detailed and result from mitigation measures

plus other legal requirements which may not be related to impacts identified in Chapter 3.

5. Measures that change the design of the proposal should be discussed as alternatives and not as mitigations.
6. Measures which would cause major impacts of their own (e.g., fencing of riparian areas impacting livestock use, and wild horse migrations) should be discussed as alternatives. Impacts of any mitigation measures are discussed and identified in this chapter as well as carried forward into Chapter 5.

Some teams experience difficulty in differentiating between mitigation measures and alternatives. Any measure that cannot be legally enforced or not committed to cannot be shown as a mitigating measure. Any changes that would make a major change in the design of the proposed action cannot be considered as mitigation measures. Measures that would cause major impacts or impacts of a different nature than the proposed action cannot be considered as mitigation measures. In some cases those items which cannot be considered as mitigation measures may warrant discussion as alternatives; however, they should meet the definition of alternatives as described under the section on alternatives (see page 109). Another possible solution for showing those measures that are not enforceable and/or cannot be committed is to show them in an appendix. In no case should measures be shown in Chapter 4 unless they are real and committed. The concept of recommended mitigation measures does not apply to ESs.

Table 5-1 attempts to provide some examples of each of the above discussed types of nonmitigation measures as contrasted against those that may be considered as mitigation if committed to.

Table 5-1
Examples of Mitigation and Alternatives

Mitigation	Alternatives
Requiring contractor to meet certain standards of construction	Requiring construction of a new town
Prohibit night time hauling of material through towns	Reducing the amount of production
Design of steel transmission towers to prevent raptor kills	Undergrounding of the powerline
Use of helicopters to minimize road construction	Relocation of the proposed route

The information developed in this chapter is put to two principal uses. One use is to help in determining the residual adverse impacts resulting from project implementation. The second use is to identify mitigation measures (from which stipulations are developed) to be applied to each major component of the proposed action (e.g., power plant, roads, powerlines, reservoirs).

There is no easy way of organizing the content of this chapter without duplicating some material. A discussion of the pros and cons of two methods follows. ESs have been prepared and approved utilizing both these methods. One way is to organize the presentation of mitigating measures by element (see Example 5-9) rather than by project component. Because the impacts chapter is also organized by environmental element, this method of organization most effectively provides the information needed to determine the residual impacts by environmental element. However, structuring the mitigation chapter in this manner makes it difficult to ascertain the measures to be applied to each individual component (e.g., power plant, mine, etc.) of the proposed action and also results in considerable duplication of material. A measure could mitigate more than one type of impact and the same measure could be listed under more than one environmental element, such as soils, vegetation, etc. One also needs to keep in mind that each measure still has to be identified with a specific impact as assessed in Chapter 3 (see 1792.44E4).

The second way of organizing this chapter is to develop it by major project component heading or federal action (e.g., power plant, coal mine, roads, powerlines, AMPs). (See Example 5-10.) As before, the narrative on each specific measure identifies the impact(s) that it is mitigating. This organizational approach is not as effective in achieving the first use but extremely effective in achieving the identification of measures to be attached to specific authorizing actions. Developing this chapter according to project component makes it difficult to track the impacts identified in Chapter 3 (Impacts) all the way through to Chapter 5 (Unavoidable Adverse Impacts) since the impacts chapter is structured by environmental element rather than by project component. The use of summary tables (see Example 5-11) overcomes this difficulty, abbreviates yet encompasses the information in this chapter, provides a good link between Chapters 3, 4, and 5, and also helps insure that adverse impacts that could possibly be mitigated are not overlooked. It also aids in analyzing the effectiveness of the various measures or groups of measures.

As contrasted to the first method which has measures pertaining to any one project component (e.g., access road right-of-way) scattered throughout Chapter 4 (under various environmental element headings), the second method organizes all mitigation measures pertaining to each project component (e.g., road right-of-way) in one place within the chapter. This grouping aids in developing stipulations or conditions to be attached to each specific authorizing document. It also helps to

ensure that measures that have been committed are not overlooked when preparing the necessary authorizing documents. Based on past experiences, the second method is also the easiest to prepare and involves the least amount of duplication.

As an aid for the reader who wishes more detail, the mitigating measure may be footnoted and the applicable law or regulation providing the basis for implementation can be cited in the reference list. The general discussion should also indicate what would result in terms of enforcement if the mitigating measure was not utilized by the applicant (e.g., fine, cancellation of permit, right-of-way, grant).

UNAVOIDABLE ADVERSE IMPACTS (See 1792.44E5)

Chapter 5, "Unavoidable Adverse Impacts", is a critical chapter to the decision-maker. It alerts him/her to consequences that might be avoided by choosing an alternative to the proposal. If done well, this chapter can fulfill a pivotal role in the decision-making process. There is a tendency among many ES authors to feel that "what we do is not adverse or we wouldn't do it." However, the facts about adverse impacts must be fully recognized and described.

Where Chapter 3 assessed and described impacts based on implementation of the proposal as designed, this chapter assesses and describes the significance of the adverse impacts which cannot be avoided or minimized. The assessment in Chapter 3 dealt with how, why, when, where and how do you know the impact would occur. This type of assessment is not repeated in Chapter 5. The assessment here starts with the unmitigated adverse and/or residual impact as stated in Chapter 3 or 4 and assesses the significance of the impact or group of impacts.

Unavoidable adverse impacts are more than the residual impacts remaining after application of the mitigation measures described and analyzed in Chapter 4. They include adverse impacts from Chapter 3 which could not be or were not mitigated. They also include impacts interpreted by some as adverse, but by others as beneficial. Adverse impacts resulting from the application (or the failure) of mitigating measures are included as well.

Chapter 5 must be more than a summary of unavoidable adverse impacts. The relative values placed on the impact and its significance are assessed. The approach to determining significance is the same as explained in the impacts chapter. The only difference is that the assessment of significance is for the unavoidable adverse impact. The discussion must quantify the residual impacts again, in the same terms as utilized in the impacts chapter. However, this chapter stands on its own without reference back to the impacts chapter so that a complete comprehensive picture of the unavoidable adverse impacts is provided for the decision-maker.

Development of Chapter 5 cannot proceed until Chapter 4 has been completed and all measures have been committed, analyzed, and results documented.

Care must be taken to insure that all unmitigated adverse impacts are brought forward and assessed. Some impacts which cannot be mitigated such as soil disturbance, removal of vegetation, acreage permanently occupied by structure, etc., are often omitted in this chapter, but should be included. Judging whether some impacts, such as aesthetic values and some socio-economic conditions, are adverse or not is difficult at times and often based on personal opinion of the reader. For aesthetic values, determining the degree of change that can be seen or not seen and the degree of visual contrast (impact) caused by the project can be analytically established by using the BLM Visual Resource Management System (VRM system) (Manual 6330). Judging whether these impacts are favorable (beautiful) or unfavorable (ugly) is based on personal experience and opinions.

To some, a change in aesthetics from a rural to an urban setting is beautiful, while others disagree. This difference of opinion can be handled in terms of popular perspectives of people, (e.g., most people view the Grand Canyon in terms of natural beauty and not in terms of severe erosion). In terms of socio-economic impacts, some people view change and growth as favorable while others view it as unfavorable. When there is a question as to whether an impact is adverse or not, it is best to treat it as adverse in this chapter and note its benefits elsewhere in the ES.

The structure of Chapter 5 is the same as for Chapter 3. In other words, this chapter is structured by environmental element and not by project component; only those elements which have unavoidable adverse impacts associated with them should be used.

One method of organizing thoughts for preparing this chapter is to list all adverse impacts as assessed in Chapter 3, identify those mitigated and the results of the mitigation and address the remainder of the impacts not completely mitigated as well as unmitigated impacts. Use of the summary tables (see Example 5-11) developed in Chapter 4 would aid in this process. At the completion of this chapter, a summary table showing the adverse impacts by environmental element should be prepared.

THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY (See 1792.44E6)

Typically, Chapter 6, which considers impacts on long- and short-term productivity, is difficult to prepare. This chapter provides a long-range perspective of the possible effect of the project on overall environmental productivity. CEQ Guidelines (1500.8(6) and 1792.44E6) provide guidance on the preparation of Chapter 6.

Enclosure 1-103

In Chapter 6, the term "productivity" could have several connotations. Unfortunately, NEPA did not make any attempt to specifically identify what is meant by the term. The following definitions of productivity should be acknowledged during the preparation of this chapter.

Natural Ecosystem Productivity - This productivity is a result of natural processes in the ecosystem. It is dependent on many things, including climate conditions such as temperature, rainfall and total solar radiation, and features of the abiotic environment such as the availability of nutrient material essential for life (e.g., nitrogen, phosphorus, and sulfur). Natural ecosystem productivity could also be subdivided according to the various renewable and nonrenewable resources. For example, the productivity of soils, forestry, wildlife, oil and gas would be included in this definition. In assessing natural ecosystem productivity, efforts should be made initially to describe the relationship of the project to the productivity of the individual renewable and nonrenewable resources located in the project area. The cumulative relationship to the total ecosystem production should be determined and discussed.

Human Productivity - Human productivity can be related to man's contribution or physical output to society as measured in some quantifiable manner such as man-days or man-hours on units of material produced. However, this productivity would also include any additional unquantifiable contribution by man to society in the form of development of the Nation's infrastructure, social well-being, and cultural heritage.

Overall Productivity - This generalized concept would encompass a combination of the two types of productivity previously defined. When describing the relationship of the project to the enhancement of long-term productivity, it is important to consider and discuss both the natural ecosystem and human productivity. Only when both of these are considered cumulatively in the assessment process, with a bottom line identification of the overall productivity, would this chapter appear to be consistent with the purpose of NEPA which encourages productive and enjoyable harmony between man and his environment.

The first task in preparing Chapter 6 is to define, for the specific project being assessed, what the short and long-term periods are. This can be done in an introduction to the chapter which also needs to state any assumptions which were made to guide the development of the chapter.

The short and long-term periods vary from project to project. The following discussion provides ideas on how to determine these periods. ESs have been written, approved, and issued with Chapter 6 prepared according to these criteria and guidelines.

The short-term is not automatically considered as the stated economic project life, such as 30 or 40 years. When the economic project life is

15 years or less, short-term can be defined as the project life. This works best with engineered and nonrenewal resource projects (e.g., power plants, transmission lines, etc.). For projects dealing with renewable resources (e.g., grazing management), the period required to achieve the stated objectives (e.g., 15, 20, 30 years) can be considered the short-term. Where economic project life is greater than 15 years, short-term can be defined as the period of time needed for construction and placement into full operation of all project components (e.g., 3 to 10 years). In either case, long-term refers to that period beyond the short-term in which impacts as a result of the project would still affect the environment. In the case of the range program ESs, the long-term refers to the period after achievement of objectives and after their immediately resulting effect on the environment.

Before proceeding with the assessment, some key points to consider are: (1) In the industrial history of the United States, once industrialization of an area is initiated, it is seldom reversed and other associated changes in land use also occur. (2) Major man-made facilities involving large sums of money normally are considered permanent and will remove land surface from productivity. (3) If the amount or type of uses is reduced or eliminated, then the long-term productivity of an area has been altered. (4) Use of a particular resource, such as water for the proposal, keeps that resource from being put to other uses (such as wildlife) which could affect productivity, at least for the project life and at times beyond if, because of that use, a particular wildlife species or herd is no longer able to sustain itself. (5) Short-term gains for production, if over-obligating the range could result in a long-term degradation. (6) Short-term losses (reductions in use) could result in long-term benefits of increased production. (7) An initial short fall in production could allow long-term gains in productivity.

This chapter should also discuss trade-offs. In order to produce a product, varying amounts of other resources have to be given up. These amounts need to be quantified to the extent possible (e.g., animal numbers lost, AUMs removed, acres of soil and vegetation disturbed and lost).

Cumulative impacts (additive and synergistic) of the proposed action combined with impacts of all other known actions (occurring or planned in the area) with similar environmental impacts are discussed and assessed in Chapter 6. (See 1792.44E6.) (Cumulative impacts might be said to differ from secondary impacts in that they could, theoretically, be avoided entirely if further resource exploitation were prohibited.) For example, a coal mining project may be only one of several that are all future possibilities for an area. The first project may be the opening wedge of industrialization for an area which destroys its essentially rural character and establishes an infrastructure of industrial services, thereby lending momentum to and increasing the feasibility of future similar projects. The decision to implement the single proposal under consideration may, in effect, be the key decision in determining the

course of industrial development of the region. It should not be made without full knowledge and disclosure of probable future effects. The other projects to be considered are those which were discussed in the interrelationships section of Chapter 1 of the ES. One example is: "The project being assessed includes construction of one 500 kv transmission line. However, within 5 years, another proposed power plant would also include construction of two more 500 kv lines in the same corridor." The cumulative impact of the existing proposal, in relation to what would occur in the future, must be considered.

A recommended approach to the analysis required for this chapter is for each author (analyst) to examine the impacts of the project on the productivity of the environmental elements they were responsible for, considering impacts analyzed in Chapter 5. One method is to prepare a simple matrix listing each element, indicating a positive or negative short-term and long-term value, based on the author's analysis as to whether the productivity would increase or decrease. This would only be a preparation tool to assist the author in his analysis and documentation. Once each author has accomplished this for his areas of concern, the chapter can best be prepared by one person, combining and integrating (synthesizing) all of the individual pieces into one cohesive and understandable chapter. The chapter is to be a summary of the total project, not simply a compilation of its component parts.

During the merging of the inputs from the various authors and through the interdisciplinary discussions which should take place during the process, additional cumulative impacts may be discovered. Those of significance should be discussed in detail and documented in the text.

The critical points that the discussion in this chapter should include (see 1792.44E6) are:

1. Cumulative impacts (including synergistic impacts)
2. Trends significantly impacting environmental values
3. Long- and short-term benefits
4. Risks to health and safety
5. Alteration in quality of life
6. Relationship of project to NEPA goals

Chapter 6 should also discuss how the proposed action relates to the environmental goals established in Section 101(b) of NEPA. These goals and suggested questions to be assessed and discussed are listed below.

1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations. Is the project protecting or improving the environment? Whose environment and in what ways and to what degree? Are critical environmental concern areas (wilderness values) being protected or destroyed, or impaired? Are options for various uses of the environment being preserved?
2. Assure for all Americans safe surroundings. Is the project creating unsafe conditions, to what extent, and how significant are these conditions?
3. Assure for all Americans healthful surroundings. Is the project improving unhealthful conditions, e.g., improving water quality?
4. Assure for all Americans productive surroundings. Is the project removing land from productivity, changing type of productivity, or increasing productivity?
5. Assure for all Americans aesthetically pleasing surroundings. Is the project changing the visual or other sensory aspect of the landscape? If so, how and in what manner and who does it affect?
6. Assure for all Americans culturally pleasing surroundings. Is the project preserving our cultural heritage or degrading it?
7. Attain the widest range of beneficial uses of the environment without degradation. Is the project maintaining or reducing the uses that the area is or can be put to? Is obtaining a new one (e.g., coal mining) resulting in environmental degradation?
8. Attain the widest range of beneficial uses of the environment without risk to health. Are any of the uses involving a health risk?
9. Attain the widest range of beneficial uses of the environment without risk to safety of people. Are safety hazards being increased over existing conditions in order to obtain additional uses of the environment?
10. Attain the widest range of beneficial uses of the environment without undesirable consequences. Are there any undesirable consequences associated with any of the uses associated with the proposed action?

11. Attain the widest range of beneficial uses of the environment without unintended consequences. What is the probability of unintended consequences (i.e., unforeseen adverse impacts) occurring as a result of project implementation?
12. Preserve important historic aspects of our national heritage. What historic aspects are being preserved and of what importance are they?
13. Preserve important cultural aspects of our national heritage.
14. Preserve natural aspects of our national heritage. What does the project do for natural values, e.g., wilderness areas, visual resources?
15. Maintain an environment which supports diversity. Is the proposal foreclosing any possible future land uses? Is it developing a monoculture or is it diversifying the potential uses of an area?
16. Maintain an environment which supports variety of individual choice. Is the proposal slanted toward use by only a certain type of person, or is it making a variety of uses available to the entire public?
17. Achieve a balance between population and resource use which will permit high standards of living. Are population levels being increased? How is standard of living being affected?
18. Achieve a balance between population and resource use which will permit a wide sharing of life's amenities. Are the socially disadvantaged people's life status being improved or further degraded? Is the project closing off a resource use to any segment of the public or making it more difficult for them to participate?
19. Enhance the quality of renewable resources. How are renewable resources being affected? Are quality and productivity being enhanced and/or improved?
20. Approach the maximum attainable recycling of depletable resources. Are the uses of the nonrenewable resources irreversible, and to what extent?

One possible way of approaching the task of the relationship of the proposal impacts to NEPA goals would be through use of a matrix. The matrix could indicate the goals along one axis and key impacts along the other indicating if it is moving toward obtaining or away from obtaining the goals. The narrative should discuss key areas of

concern and deal with the net assessment of the relationship of the entire project to the NEPA goals.

In the past, Chapter 6 has been structured by environmental element. This procedure tends to obscure critical systemwide concerns and often results in an inconsistent approach to and incomplete coverage of these significant points. It is suggested that the chapter be arranged by the six identified critical points (page 105) with a discussion, where appropriate, by environmental element under each main point.

Selected illustrations of sections from Chapter 6 are shown in Example 5-12. The Kaiparowits FES 76/12 and Foothills DES 77/24 provide good models for this chapter.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES (See 1792.44E7)

The major point of Chapter 7 (Irreversible and Irretrievable Commitment of Resources) is to consider and quantify the use of all materials, fuel, etc., consumed by project construction, operation, and maintenance. The assessment (and full documentation) in this chapter is to be based on the total project and not simply on the project components. The format is structured by environmental element, as appropriate, but also includes coverage on loss of human life and loss of power and materials used in development and operation (also, cultural resources should not be forgotten).

The following terms should be defined for the reader in the introduction.

Irreversible - incapable of being reversed; once initiated, use, direction, or condition would continue.

Irretrievable - essentially irrecoverable; not reasonably retrievable; once used, not readily replaceable.

The introduction should also spell out for the reader the context in which commitment is focused. If "commitment" focus is on species or population, but not on individual organisms, that fact should be noted. The loss of certain individuals may be irreversible or irretrievable while the species or population may remain viable although diminished in diversity and numbers.

Determine or estimate significance of loss or relate loss to some baseline condition. (For example: The loss of coal represents 30 percent of the total known coal resource in this area.) In determining loss of production, be sure to compute it both on an annual basis and on project life, such as AUMs per year and AUM total. If possible, compute incremental loss on disturbed but rehabilitated areas, in addition to computing permanent losses.

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Be sure to remember that the use of a resource during the project could preclude its use for other things, and to that extent would be irretrievable during the project life. Examples of this would be air and water resources (e.g., once the source of pollution is removed, that source of pollution would cease and it would be expected that, barring irreparable damage, air and/or water quality would tend to return to previous conditions). However, the loss of good air and/or water quality for the period of the project cannot be retrieved.

ALTERNATIVES (See 1792.44E8)

Chapter 8, Alternatives, is one for which a solid preparation job is most important. In many cases an ES ends up in court because it fails to adequately discuss and assess all reasonably possible alternatives.

The criteria for determining alternatives and preparing Chapter 8 follow.

1. Alternatives must be technically possible. The process or technique must have been proven feasible in full operation or must have been proven experimentally successful and be in an advanced developmental stage.
2. Alternatives must be reasonably available in the area under consideration. The technique may be feasible in other areas but may not be feasible in the area under consideration. For example, an air-cooled power plant could only be operated under certain climatic conditions.
3. Alternatives should be considered if their impacts would be different from those of the proposed action. "Different" means different in any respect - kind, location, magnitude, intensity, duration or incidence.
4. Alternatives outside the authority of the ES preparing agency are evaluated if they meet criteria one through three.
5. Alternatives which achieve different objectives are not necessarily alternatives to the proposed action. If it is necessary to assess alternate uses of critical resources which are used to implement the proposed project, then this assessment should be located under the no-action alternative. One example of this situation was the use of water for the Kaiparowits project. Because of the very limited availability of the water resource in Utah, it was deemed necessary to assess the alternate uses for this water. However, unless the no-action alternative was implemented, the water would not be available for other uses; accordingly, a different water allocation could not be considered as an alternative in and of itself. Therefore, the

discussion on alternate water uses formed a part of the assessment of the no-action alternative.

6. When the proposed action is bureau-initiated and when it results in a management change, the no-action alternative must assess the impact of continuing the present level of management. An example of this situation would be a proposed action that will implement allotment management plans (AMPs). No-action would then mean continued grazing under current procedures, at the same rate with the same type of livestock use, and would not involve implementation of any improved practices. The same assumptions used to develop the future environment section have to be used for the no-action alternative in the range ESs. The future section provides the descriptive foundation for the no-action alternative. Any changes in current use and procedures would form a different alternative; e.g., slower implementation of AMPs would be considered as a separate alternative.
7. The proposed action is not itself an alternative. Alternatives are other ways of accomplishing what the proposal is to achieve.
8. Do not draw conclusions as to acceptability or desirability of any alternative.
9. Economic costs of alternatives should not be a factor in deciding to assess an alternative because the cost and benefits of the environmental impacts are not known until after the environmental assessment is made and the ES written and reviewed. However, where benefit/cost analyses are prepared on grazing proposals, the results can be used to develop different mixes of components to consider cost effective alternatives as well as to avoid adverse environmental impacts.

Though the ES team may start with a list of alternatives, it should be kept in mind that, as the assessment of the proposal proceeds, new alternatives may become evident and should be assessed. One must keep in mind that the proposed action might not be the eventually preferred action. Alternatives should be developed to avoid and/or to reduce the impacts of the proposal while at the same time still basically achieving the objective of the proposed action. In some cases (e.g., range management alternatives and coal production level alternatives), the alternatives will not meet precisely the same objective, at least not during the same time frame. But these options still have to be considered and assessed.

Chapter 8 is critical for the decision-maker. The alternatives must not be "straw men," i.e., merely an exercise enabling us to say that alternatives were assessed. It is up to the team to make a thorough search for alternatives as well as a thorough assessment of the impacts

of each alternative. It is up to the decision-maker to weigh the environmental impacts of each alternative very carefully before making a decision. He cannot do this unless all of the facts of environmental impact assessment are presented to him by the ES team.

The assessment of each alternative is structured to describe the alternative clearly and to document the assessment of impacts. The description portion covers the same basic points as the original proposed action description. The discussion should be self-contained and not refer the reader to various parts of the ES. The parts of the proposal which may form part of the alternative should at least be summarized in tabular form. The reader should be able to obtain the complete picture of the alternative in one place. The description has to establish the data and parameters necessary to conduct the impact assessment.

The impact assessment is also structured to be complete within itself and should not refer the reader to various parts of the ES. It shouldn't be a "do-it-yourself kit" requiring the reader to put his own assessment together. In many cases, because of changes in the alternative, the impacts assessed in Chapter 3 are not the same in magnitude, intensity, incidence, and duration as they would be under the alternative and therefore cannot be cited. The assessment also should not produce a documentation of impacts which would not occur, but it should present a complete and comprehensive characterization of the actual impacts of any particular alternative. The impact assessment for the alternatives follows the same process and meets the same criteria as described for Chapter 3, which describes the impacts of the proposed action. Chapter 8 should be structured in the following way.

CHAPTER 8

ALTERNATIVES

EASTERN ROUTE

Description of Alternative

Description of Environment (Not required when alternative is located in (and would influence) the same area as was described in Chapter 2.)

Impacts

When appropriate (see 1792.44E8b), the headings mitigation measures, unavoidable adverse impacts, short-term/long-term, and irreversible/irretrievable impacts are also used. When the description of the environmental elements is adequately covered in Chapter 2 of the ES, it is not necessary to repeat them under the alternatives. Care must be taken to insure that the description of the environment accurately relates to the impacts of the alternatives.

For this reason, and to prevent authors from having to backtrack in the assessment process, it is most expedient to identify alternatives at the earliest possible stage in ES preparation, preferably before work begins on Chapter 2. This will not be possible for all alternatives since some will not become evident until after completion of Chapters 4 and 5. Identification of possible alternatives should involve all team members. It is extremely important that each author assess each alternative in terms of the environmental elements/issues for which he is responsible.

In order to provide a comparison for the reader, a summary section for Chapter 8 is suggested. This summary can best be prepared in a tabular format which compares either the gross impacts or the net impacts (whichever is most appropriate) of the proposal and all alternatives in the same table or a series of tables. It should show beneficial impacts as well as adverse. Example 5-13 provides a partial sample of such a summary. A comparative analysis should also be prepared along with the table. This would serve the purpose of identifying the major and significant differences among the proposed action and alternatives.

CONSULTATION AND COORDINATION (See 1792.44F)

Chapter 9, Consultation and Coordination, describes consultation and coordination which took place while preparing the ES. The format for this chapter of the DES is described below.

1. History of Coordination Efforts. The statement should present a brief summary of the actions taken to achieve consultation and coordination and a discussion of the type of public forum made available.
2. Coordination in Development of the Proposal. This section is required for bureau-motion proposals only (e.g., range management proposals). Briefly describe the coordination efforts involved in developing the proposal, e.g., meetings with range permittees and adjacent land owners.
3. Consultation and Coordination in Preparation of the DES. Describe the results of the process by agency and/or group (e.g., Forest Service, Fish and Wildlife Service, Sierra Club). It is most critical that contact be made with all Interior agencies which have expertise and/or jurisdiction, and results of these contacts shown. Input from other key agencies or groups should be briefly summarized. (See Examples 5-14 and 5-15 for ways of approaching this.) It is not sufficient to merely list the agencies and individuals contacted; the type and degree of input provided ought to be identified. This discussion should contain evidence of contact with the State Historical Preservation Office(s) by specific name and the National Advisory Council on Historic Preservation.

NOTE: In the FES, the above sections are not changed or revised from what was published in the DES.

4. Coordination in the Review of the DES. This section identifies the agencies, bureaus and groups that will be sent the DES and requested to provide official comments. This list is the same as the one shown on the summary page. Note: This list is not the total mailing list for the ES, but only includes entities from whom official comments will be requested. This section also informs the reader as to whether public hearings will be held. If it is known where and when they will be held, that information is also included.

The only change in this section in the FES from the DES is that those which provided comments are identified by an asterisk.

5. Public Comments and Response. This section is prepared only for the FES. There are several ways of structuring this section which will be discussed later.

Handling Review Comments

General Procedures and Criteria

All letters of comments are recorded on the official log, Form 1792-1 and 1792-3 (see 1792, Illustrations 6 and 7). BLM Manual 1792.44G2 identifies the types of letters of comment that are to be included in the final statement. However, this list should be altered to meet each situation depending upon the numbers of letters received, the type of individuals who commented, and the amount of public controversy and interest. In some cases it may be advantageous to include all letters received. If many similar letters are received, one letter can be included as an example.

All letters of comment are reviewed to determine if they contain specific (i.e., substantive) comments which warrant specific changes or whether they are statements of position or belief in regard to the proposed action. All letters are handled by the team leader. Originals are maintained unmarked in a file except for a number which corresponds to the log. No routing stamp or initials are placed on the originals. The team leader makes assignments on copies only.

The technical coordinator works with the team leader in determining which written or hearing transcript comments are to be answered in the final ES and in determining which team members are assigned to respond to each comment. Samples of marked-up letters and transcript may be found in Examples 5-16 and 5-17.

The project manager and/or team leader develops a tracking system for assignments and due dates. Text changes and answers to comments need to proceed through the same preparation and review process as was used for the draft statement. (See Section 3)

It is a good idea to send all commentators a simple letter indicating that comments were received, are being considered, and that, if a response is warranted, it will appear in the final ES (Example 5-18). Hearing transcripts are not printed in the document.

To be considered substantive, a comment should pertain to the adequacy of the impact assessment. Those that do not deal with the lack of, or incorrect assessment of, environmental effect of the proposal are not considered as substantive comments requiring a written response. Thus, comments which present new data, question facts and/or analysis/synthesis, and raise questions or issues bearing directly upon the DES are fully considered and evaluated.

Emotional expressions of opinion or beliefs are not to be dismissed as they provide the basis from which to reassess the impacts on human values. A common tendency among professionals is to consider factual input as legitimate and emotional input as having no role in the decision-making process. This process relates to political aspects

as well. These factors must be considered since they represent many aspects of the community. Nontechnical aspects must be addressed as well as technical aspects. Such material should be considered in preparing the final ES; however, comments of the types just described cannot be specifically answered as the comments on the adequacy of the impact assessment can. Letters for or against the proposal may be tabulated and the total number indicated in the final ES. (See Kaiparowits FES 76/12.)

All substantive comments require a written response of some type. The response may be as simple as, "text revised, see . . . " Even if the letter does not fit the criteria for printing, any substantive comments it raises are included in Chapter 9 and require a response.

Those comments which fall into the editorial category (i.e., those which suggest specific errors or changes in the text, data or tables) should be evaluated for their appropriateness, but there is no formal (i.e., written) response required. The response to these comments is that the final statement is revised, where needed, as suggested by the comments. Therefore, all comments and responses of editorial nature (i.e., that deal with errors, incorrect information, etc., but that do not concern alleged inadequate or incorrect analyses) should be marked and analyzed but not included in Chapter 9. However, necessary text changes have to be made.

Comments have to be specific enough in nature to enable preparation of a specific response. A nonspecific comment results in a nonspecific response which could leave us open for additional criticism. The team should not read meaning into the commentor's remarks. If the comment is nonspecific in nature, it should not receive a formal (written) response unless it is of very critical nature. This procedure is necessary to allow time for the authors to fully assess specific and detailed substantive comments which deal with major issues covered within the statement.

From a legal standpoint, the use of the word "concur" or "we concur" is not appropriate when agreeing with a comment that correctly identifies a deficiency in the draft. Responses should not use the word "concur" or "dissent" when there is agreement with the comment. The response should merely refer to the text change (i.e., "see text change in . . ."). The place the text is revised should be identified as precisely as possible, but without the use of page numbers. Page numbers are subject to change and will change between draft and the final. Also the use of any table numbers should be verified as some of them may change between the draft and the final. When referring to a text change, the reference should be as specific as possible without the use of page numbers; i.e., refer to the chapter and the section within the chapter where the text change was made. Wherever possible, the response should always refer to the FES, not the DES.

It is vital that the text change be made when the response indicates that one was made. When the response is that a text change was made, it is not necessary to repeat the text change in the response.

Personal pronouns such as "we" and "I" should not be used in the responses.

Specific Procedures

There are several ways of handling comments in the final ES. Illustration 4 of 1792 presents one way; however, this method is cumbersome and requires more space than some others. This section presents two other methods, both which have been used successfully, each having its pros and cons. In either method, when the comment is a quote from the commentor, then quotation marks should be used.

Grouping and Summarizing Comments by Environmental Element or Resource Group

This procedure involves grouping the comments by category (e.g., wildlife, air quality). These categories would become subhead titles. Similar comments under these categories would be summarized and/or paraphrased. Some additional categories would have to be developed for those comments too broad in nature to fit under a specific environmental element or resource category (e.g., alternatives or mitigation).

In using this procedure, the comments are numbered without regard to the number of the letter in which they were contained. A master list of commentors, which indicates speakers at hearings as well as comment letters, is prepared. Each commentor is designated by number; the list is placed at the beginning of the public comment and response section. The condensed and/or summarized comment is printed, followed by the number(s) of the commentors who raised the issue (Comment: Page 3-18 refers to the fact that later turnout dates for grazing proposed in some AMPs would result in livestock being held on private lands for longer periods in early spring. . . Later irrigation and longer spring grazing on ranchers' cropland would, without question, cut down on crop production, which was an impact not recognized in the DES. Comment raised by commentors No. 7, 10, 65, 69, 76, and 91). This procedure was used in the October 1976 Challis Range FES, and the August 1977 PP&L FES, and recent range ESs (San Luis, Uncompahgre). These FESs should be consulted for examples of how to proceed with this method.

The benefits of this first procedure are:

1. It eliminates duplicate comments and responses.
2. It results in the reduction of volume (size) of this chapter.

3. It groups like items of concern, which enables the decision-maker to obtain a better grasp of the problems raised by the commentors, and the critical issues.
4. It follows through with the structure that was established in the preceding chapters (i.e., in the description of environment, impacts and unavoidable adverse impacts) allowing those interested in certain subject areas to determine the concerns raised about the item by the public.
5. It tends to focus on the major, critical comments allowing time for the ES authors to properly analyze these comments and all their facets.
6. It allows work to begin as soon as comments are received.

The disadvantages of this procedure are:

1. In combining and paraphrasing comments, there is a danger of incorrectly stating the comment or eliminating a critical part of the comment so that it does not raise the issue or problem the commentor intended.
2. The method requires continual grouping as new comments are received. (However, this is expected to be minimal as new comments are likely to be similar to previous ones and only the number of the commentor would have to be added.) The ES author may have to resummairize any one particular comment a couple of times.
3. This system also eliminates the personal touch that is obtained by handling each separate comment.

Individual Handling of Each Comment

The second procedure involves responding to each individual substantive comment raised either in letters or the hearings. Each commentor is designated by a number, as is each comment.

Each letter has a number corresponding to the log number. As comments in a letter are identified, they too are numbered consecutively within each letter (e.g., 10-3, meaning letter 10, comment 3). A form can be devised that each analyst can use for his response. (See Example 5-19.) The hearing transcripts are identified by place and by the person giving the testimony. The comments are numbered as was done for the letters (e.g., Salt Lake City Hearing, Janke, comment number 10). If a text change is required, a copy of the pages with the new text can be attached to the form that is shown in Example 5-19.

The comment and response section is then divided into two parts: (1) Letter comments and responses and (2) hearing comments and responses. Hearings are located last because the comments raised in them are usually repeated in more detail in letters, and the response should be directed to the most detailed comment. An index (mini Table of Contents) is placed in front of each part showing the commentor name, number, and the page where the comments and responses begin for that letter or hearing.

Responses to comments are arranged in the order that the letters were received. As the process proceeds through the letters and into the hearings, some comments will be duplicated. When a comment is the same as one in a previous letter, the response only refers to the place where the comment was previously answered (e.g., see response to letter 9, comment 2). However, the ES author must insure that the comment is the same and that it does not bring up additional points that the previous comment didn't contain. In other words, the team must be certain that the response cited fully responds to the comment at hand. When referring to a response elsewhere in Chapter 9 that responds to the comment at-hand, the reference is always to a previous response (backwards in the chapter), not to one which occurs further on in the chapter (forwards). Except in the case of figures, maps and tables, the reader is never referred ahead in the document, only backward. Even though the response, when the same, is not repeated, the comment raised by that particular commentor is repeated in the document.

When using this procedure, all comments which are similar or the same within each letter and/or hearings testimony, are combined and responded to only once for the individual. In other words, references to comments and responses should not be made within the same letter or the same person's hearing transcript. For an example of how this procedure works, refer to the Kaiparowits FES.

The benefits of this procedure are:

1. It allows work to begin as comments are received and facilitates handling of late comments.
2. It adds a personal touch in that each individual comment is handled.
3. It eliminates the possibility of changing the meaning of the comments.

The disadvantages of this procedure are:

1. It results in increased volume (size) of this chapter since each comment is printed.
2. It makes it difficult for the decision-maker to determine the major issues of concern.

3. It makes it very difficult to determine the concerns raised on individual environmental elements or resource categories.
4. It creates a tracking problem during the final preparation of the chapter when the team must insure that all references to previous responses are correct as to designated number.
5. It has the danger of not responding fully to the comments since the tendency is to refer (to a previous comment if two comments look similar) without fully analyzing the comment and the previous response to insure that the points covered are the same.
6. It also has resulted in time and effort being spent on inconsequential comments (those received first) with insufficient analysis and response being made to critical and major comments received later in the process.

EXAMPLE 5-1

SAMPLE OUTLINE

Overview - This section (also called the Preface) is to be included when necessary. (See Interim Guidance, Section 5, Scope and Coverage of the ES.) Should be three pages at most.

I. Description of the Proposal

A. Background

B. Proposed Action

1. Purpose and Objective(s)

2. Location

3. Description of discrete actions and/or components of the proposal (e.g., power plant, grazing systems, chaining and seeding).

C. Authorizing Actions - This section is not required for bureau motion ESs (e.g., those on range, timber, wild horse control, etc.). These are organized by agency.

1. BLM

a. Issue 30 competitive leases on 56,000 acres. The leases are shown in Map 1-5.

b. Grant 15 miles (5,000 acres) of right-of-way for construction of an access road. (See Map 1-5 for location.)

2. U.S. Geological Survey (USGS)

3. Etc.

D. Interrelationships

1. With BLM plans (Management framework plans (MFPs), activity plans, etc.)

2. With other federal, state, and local plans

3. With other known, proposed, and projected projects

EXAMPLE 5-1 (Cont.)

II. Description of the Environment

A. Existing

1. Climate
2. Air Quality
3. Geologic Setting - Include rare or unique geological phenomena, paleontological resources and other geologic resources of scientific, educational, or heritage value. Paleontological resources should be under a separate subhead in this section.
4. Topography
5. Soils
6. Water Resources
 - a. Ground - Include quality and use.
 - b. Surface - Include quality and use.
7. Vegetation - Discuss aquatic, terrestrial, riparian, unique or representative examples of ecosystems, and other botanic phenomena of scientific, educational, and heritage value. Cover endangered and threatened species in a separate subhead within this section.
8. Animals - Describe aquatic, terrestrial, endangered and threatened species (under separate subhead) and other unique zoologic phenomena of scientific, educational, or heritage value.
9. Cultural Resources
10. Visual Resources
11. Wilderness Values
12. Noise
13. Recreation Resources - Describe values, existing sites, and uses including hunting and fishing.

EXAMPLE 5-1 (Cont.)

14. Agriculture
 - a. Livestock Grazing
 - b. Farming
15. Forestry Resources - Consider the use of the resource, not the vegetation.
16. Mineral Resources - Describe the resource base and its current uses.
17. Land Use Plans, Controls, and Constraints
18. Transportation Networks
19. Socio-economic Conditions
 - a. Population
 - b. Employment
 - c. Income
 - d. Attitudes and Expectations
 - e. Life Styles
 - f. Infrastructure
 - g. Other items as appropriate to the area and the expected impacts of the proposal

B. Future Environment

Utilize same headings as above; describe how it may exist at some selected point in time. (See text in section 5.)

III. Environmental Impacts Of The Proposed Action

- A. Assumption and Assessment Guidelines
- B. Impact Assessment

The assessment should deal with short-term as well as long-term impacts. It is essential that the assessment arrive at the "total impact" on each environmental element or resource. Those elements or resources not impacted by the proposed

EXAMPLE 5-1 (Cont.)

action need not be discussed further. The introduction to this section should explain that the assessment indicated no significant impact on these particular elements or resources. The exception to this guidance is for those resources covered by special laws (e.g., cultural resources, endangered and threatened species). These topics should be covered in their respective sections and the statement made that no impact is predicted. The discussion of impacts should follow the same outline used for the description of the environment.

IV. Mitigating Measures Not Included In The Proposed Action

See Example 5-10.

V. Adverse Impacts Which Cannot Be Avoided Should The Proposal Be Implemented

Where appropriate, use the same headings as in Chapter 3.

VI. Relationship Between Local Short-Term Uses Of Man's Environment And The Maintenance And Enhancement Of Long-Term Productivity

A. Introduction - Establish assumptions, definitions, and brief summary of major effects.

B. Use the following for subheads:

1. Cumulative impacts
2. Trends significantly impacting environmental values
3. Long-term benefits
4. Risks to health and safety
5. Quality of life
6. Relationship to Sec. 101 (b) Goals of NEPA

VII. Irreversible And Irretrievable Commitments Of Resources Which Would Be Involved In The Proposed Action Should It Be Implemented

A. Introduction

B. Use whichever environmental elements or topics are appropriate

EXAMPLE 5-1 (Cont.)

VIII. Alternatives (for each alternative)

- A. Description of alternative
- B. Description of environment (if necessary)
- C. Assessment of impacts

IX. Consultation and Coordination

- A. History of coordination efforts
- B. Coordination in development of the proposal (used for bureau motion proposals only)
- C. Consultation and coordination in preparation of the DES

NOTE: Sections A through C are not changed or revised in the FES.

- D. Coordination in the review of the DES
- E. Public comments and responses

X. Appendices

XI. Glossary

XII. References Cited (Shows only information sources actually cited in the ES.)

EXAMPLE 5-2

SAMPLE PREFACE

This statement represents an assessment of broad cumulative impacts on the environment of coal resource development in the Eastern Powder River Coal Basin of Wyoming and analyses and syntheses of specific impacts of pending applications before the federal government.

A number of companies holding leases on federally owned coal deposits in the Gillette-Douglas, Wyoming area have submitted proposed mining and reclamation plans for their respective leaseholds to the U.S. Geological Survey for approval in accordance with existing federal law and regulations. Some of these plans cover totally new mines to be opened; others cover expansion of present mines onto existing federal leaseholds. A number of similar submissions of mining and reclamation plans on other leaseholds in this area can be anticipated in the near future.

Burlington Northern, Inc. and Chicago and North Western Transportation Company have jointly applied to the Interstate Commerce Commission for a certificate of public convenience and necessity authorizing the construction and operation of a new railroad which would link an existing line near Douglas, Wyoming with one near Gillette, Wyoming, thereby providing a transportation facility which could be utilized by anticipated mining activity. Short spur lines to the various mines would also be required in some cases.

Federal land holdings in the area require authorizations by the Bureau of Land Management, Department of the Interior, or the Forest Service, Department of Agriculture, for the occupancy or use of federal lands.

Other related activities will follow, should the federal approval actions be obtained, many of which may or may not require additional federal authorizations. For example, development of electric powerlines, mine mouth power generating facilities, coal gasification plants, water supplies for various operations, roadway and other communication facilities, new residence and business communities, and increased facilities of all kinds in existing communities may develop.

The federal agencies have determined that approval of the pending applications would collectively constitute a major federal action having a significant effect on the quality of human environment. Therefore, the agencies have determined that to protect the public interests most effectively and to meet their individual responsibilities under the National Environmental Policy Act of 1969 most efficiently, they should jointly undertake the preparation of a single environmental impact statement which would consider not only the impacts of the

EXAMPLE 5-2 (Cont.)

several proposals but also the collective cumulative impacts, primary and secondary of the development of the coal resource in the area.

Further, to meet the intent of the Act in the most productive fashion, it is necessary to examine the general geographic area of the proposed and potential actions. The primary study area is that part of the Powder River Coal Basin in Wyoming lying generally eastward from the Powder River to the outcrop line of the coal resource and somewhat north of Gillette to a point somewhat south of Douglas. Selection of the study area is based in part on present and anticipated levels of mining activity, differing quality of the coal resource, different mining techniques required, and differing physical reclamation requirements. Those considerations having a broader scope of geographic impact such as social condition, economic factors, atmospheric influence, water resources, and recreation uses, are treated on a larger regional basis than the primary study area. This statement discusses the environment and evaluates the collective impact of the proposed actions, and insofar as now possible, the impacts of potential future coal mining within the geographic area described above. This statement also examines in detail certain proposed activities for which federal actions are required.

EXAMPLE 5-3
(Range Management ESs)

CHAPTER 1

DESCRIPTION OF PROPOSED ACTION

BACKGROUND

PROPOSED ACTION

General (Statement of proposal, location, land status, overall purpose,
and objectives of proposed action)

Components of the Management Program
(Brief introduction)

Allotment Management Plans (AMPs)
(Brief introduction about AMPs and grazing systems in general,
tabular summation)

Four Pasture Rest Rotation. (Start paragraph)

Three Pasture Rest Rotation. (Start paragraph)

Deferred Rotation. (Start paragraph)

Etc.

Custodial Management

Elimination of Grazing

Continuation of No Grazing

Specific Objectives
(Specific objectives of AMPs)

Improvements: Note: Amount of description based on significance of
impacts
(Brief introduction)

Fences

Fence Removal (Start paragraph)

Cattleguards

EXAMPLE 5-3 (Cont.)

Trails and Roads

Pipelines

Wells

Water Storage Tanks

Rainfall Catchments

Reservoirs

Springs

Water Troughs

Chaining and Reseeding

Plowing and Reseeding

Interseeding

Contour Furrows

Burning

Implementation Schedule

INTERRELATIONSHIPS

EXAMPLE 5-4

BACKGROUND

Five conservation groups and one individual in October 1973 filed a law suit claiming that the Bureau of Land Management's proposed programmatic environmental impact statement on its livestock grazing program did not comply with the requirements of the National Environmental Policy Act (NEPA) of 1969, 42 U.S.C. 4321 et seq., in BLM's administration of the public lands of the United States. The court subsequently approved in June 1975 the agreement worked out by the parties involved for the completion of 212 site-specific environmental statements.

The Sandy area in southwestern Wyoming was designated for the first environmental statement (ES) to be prepared in Wyoming for a number of reasons. The Sandy area includes part of the nationally known Red Desert of Wyoming. The area is sparsely inhabited by man and few of man's activities, except for roads, are apparent to the visitor.

Past grazing use was primarily by migratory sheep bands; therefore, fences and permanent dwellings were not constructed because they were not necessary for management. However, some of the present livestock operators no longer wish to run sheep and have expressed a desire to convert some sheep use qualifications to cattle use. Fences are considered necessary for proper cattle management at the level of cattle use proposed for the Sandy area (Stoddart, Smith, and Box 1975; per. comm., Don D. Dwyer 1973).

The Sandy area is 86 percent public land directly administered by BLM. BLM's policy is to manage the land for multiple use. These uses in the area include grazing by large herds of antelope, deer, elk, and wild horses, plus various recreational uses, including hunting, fishing, off-road vehicle (ORV) use, and enjoyment of the open spaces. Various segments of the public have expressed concern that these uses would be affected by a large scale fencing program.

Therefore, requested conversions from sheep to cattle use have not been allowed by BLM until a full evaluation of the environmental impacts can be made. Because of this, many livestock operators have been forced to remain with the existing class of stock or, in some cases, to take nonuse* for a number of years while awaiting a BLM decision regarding conversions. The request for conversions had prompted the BLM Rock Springs District Manager in November 1974 to initiate writing an environmental assessment record (EAR) on improved livestock grazing in the area. This project was discontinued when the Bureau agreed to prepare site-specific environmental statements.

* Definitions of technical terms used in this ES may be found in the glossary at the back of the ES.

EXAMPLE 5-4 (Cont.)

The Sandy area was chosen as first priority to obtain a relatively early answer for the livestock operators as to whether they could convert, and if they could convert, to enable them to do so as soon as possible with proper application of environmental considerations.

The boundaries of the Sandy area were chosen because of the area's unique features, including:

1. The land is predominantly national resource land; thus there is more management flexibility in grazing system design and project location.
2. There are large numbers of wild horses and migratory wildlife. Many impacts to these animals are cumulative and a large area is necessary to evaluate cumulative impacts.
3. The area has very few fences today. The public has expressed concern about increases in fencing in the area and this concern needs to be assessed.
4. The large number of livestock operators' requests for conversion in use could have cumulative impacts on the ecosystems that need to be evaluated.
5. Most of the allotments are large, thus similar impacts over extensive areas would be expected.

In the past the Sandy area was divided into two grazing administrative units, the Little Colorado Unit and the Northeast Unit.

The Little Colorado Unit was that area west of Highway 187 (Map 1-1) and the Northeast Unit was the area east of Highway 187. Grazing licenses were issued unitwide. Table 1-1 reflects past authorized domestic livestock use since 1968.

EXAMPLE 5-5

AUTHORIZING ACTIONS

Federal

Bureau of Land Management (BLM)

The BLM would:

1. Grant a 100-foot tramway right-of-way for the coal conveyor from the Wilberg Mine across 0.5 miles of public land (lands under management of BLM) to the coal storage area (Act of January 21, 1895; 28 Statute (Stat) 635; 43 United States Code (U.S.C.) 956; 43 Code of Federal Regulations (CFR), Part 2810). This act authorizes the Secretary of the Interior to permit the use of rights-of-way over national resources land for tramroads associated with mining, quarrying, cutting timber, etc. Tramroads are considered to include tramways, railroads, and motor truck roads (CFR 2811.0-5).
2. Grant a 130-foot right-of-way for the Emery-Spanish Fork Canyon-Camp Williams transmission line, including 3 miles of dirt access and service road, to cross approximately 17 miles of public land (Act of March 4, 1911; 36 Stat. 1253; 43 U.S.C. 961, as amended; 43 CFR, Part 2850).
3. Grant a 130-foot right-of-way for the Emery-Salina Canyon-Sigurd transmission line to cross approximately 18 miles of public land (Act of March 4, 1911; 36 Stat. 1253; 43 U.S.C. 961, as amended; 43 CFR, Part 2850). No new service or access roads would be required in this right-of-way.
4. Grant a 130-foot right-of-way for the Sigurd-Camp Williams transmission line to cross approximately 34 miles of public land (Act of March 4, 1911; 36 Stat. 1253; 43 U.S.C. 961, as amended; 43 CFR, Part 2850).

The act referenced in Items 2., 3., and 4. above authorizes the Secretary of the Interior, under such regulations as he may fix, to permit the use of rights-of-way over public lands for the installation of poles and lines for the transmission and distribution of electrical power.

EXAMPLE 5-5 (Cont.)

5. Issue a special land use permit for the approximately 2-acre mine material storage area (Revised Statute (R.S.) 446, 453, and 2478, as amended; 43 U.S.C. 1, 2, 1202; Act of July 14, 1960; 70 Stat. 506; 43 U.S.C. 1361, 1364).
6. Issue a special land use permit for approximately 54 acres of public lands for a permanent coal storage pile with reclaim and load out facility at the termination of the feeder coal mine conveyor (R.S. 446, 453, 2478, as amended; 43 U.S.C. 1, 2, 1201; Act of July 14, 1960; 70 Stat. 506; 43 U.S.C. 1361, 1364; 43 CFR, Part 2920).
7. Grant a special land use permit for approximately 3.0 acres for a leach field for waste disposal on public lands (R.S. 446, 453 and 2478, as amended; 43 U.S.C. 1361, 1364; 43 CFR, Part 2920).
8. Grant a 30-foot right-of-way for a sewer line over 0.1 mile of public lands (Act of February 15, 1901; 31 Stat. 790; 43 U.S.C. 959; 43 CFR, Subpart 2873).

For paragraphs 5 through 8 above, the 43 CFR, Part 2920, authorizes the Director of the Bureau of Land Management to perform under the direction of the Secretary of the Interior all executive duties relating to the public lands, including issuance of special land use permits.

U.S. Geological Survey (USGS)

The U.S. Geological Survey would approve the mining plan and administer operation of coal leases at Wilberg Mine, and in consultation with the U.S. Forest Service, approve the surface facilities plan within the boundaries of the coal lease (Section (Sec) 32 of Act of February 25, 1920, 41 Stat. 450; 30 U.S.C. 189; Sec. 10 of Act of August 7, 1947, 61 Stat. 915; 30 U.S.C. Part 211; Secretarial Order No. 2948, October 6, 1972; 43 CFR Part 23). These acts and order authorize the Secretary of the Interior to prescribe the necessary and proper rules and regulations to promote the mining of coal and other leasable minerals.

U.S. Forest Service (USFS)

The U.S. Forest Service would:

1. Consult with USGS, before they approve the surface facilities plan within the boundary of the coal lease on National Forest Land.

EXAMPLE 5-5 (Cont.)

2. Grant a 100-foot special use permit for a coal conveyor from Wilburg Mine to cross approximately 0.8 miles of Manti-La Sal National Forest.
3. Grant a 130-foot special use permit for Emery-Spanish Fork Canyon-Camp Williams transmission line to cross approximately 16 miles of Uinta National Forest Land and 1 mile of the Manti-La Sal National Forest.
4. Grant an 130-foot special use permit for Emery-Salina Canyon-Sigurd transmission line to cross approximately 20 miles of Fishlake National Forest Land.
5. Grant a 30-foot special use permit for the sewer line to cross approximately 0.7 miles of Manti-La Sal National Forest.

EXAMPLE 5-6

SUGGESTED APPROACH FOR DESCRIBING INTERRELATIONSHIPS
BETWEEN THE PROPOSAL AND THE MFP
(Range Management)

1. Show the program (livestock in this case) recommendations (MFP 1) if the proposal deals only with livestock. If it deal with wildlife and wild horses, then these too would be listed.
2. Show only the other resource recommendations (MFP 1) that conflicted with the MFP 1 recommendations. This will allow the reader to see what the other resource possibilities were in relation to the program generating the action. List the recommendations by resource (see table). Obviously, more than one resource recommendation or more than one resource could conflict with any given livestock recommendation. It is not the intent in ES Chapter 1 to discuss the other resource recommendations that conflict with each other (e.g., MFP 1 for wildlife recommends protection of sage grouse strutting grounds and MFP 1 for recreation recommends developing the same area for recreation).
3. Describe the conflict between the livestock recommendations and the other resources. In many cases, the specific conflict may not be obvious between the different resource MFP 1 recommendations. This column then looks at the MFP 2 analysis that took place and summarizes the conflicts of the resource recommendations with the livestock MFP 1 recommendations.
4. Briefly state rationale for the MFP 2 recommendation.
5. Show the trade-offs (quantify to the degree possible).

EXAMPLE 5-6 (Cont.)

EVOLUTION OF THE PROPOSED ACTION THROUGH THE NFP PROCESS

LIVESTOCK NFP 1 RECOMMENDATIONS	OTHER RESOURCE NFP 1 RECOMMENDATIONS THAT CONFLICTED WITH RANGE RECOMMENDATIONS	NFP 1 CONFLICTS	NFP 2 RANGE RECOMMENDATIONS	RATIONALE FOR NFP 2 RECOMMENDATIONS	TRADE-OFFS
1. Specific Recommendations	<u>Wildlife</u> Specific Summarized Recommendations	Brief sharp description of the conflict		Brief sharp rationale for why conflict was resolved in the manner it was	Quantify, or specifically describe them
	<u>Watershed</u>				
	<u>Wild horses</u>				
2.	<u>Wildlife</u>				
	<u>Watershed</u>				
3. etc.	etc.				

EXAMPLE 5-7

ASSUMPTIONS AND ASSESSMENT GUIDELINES

1. The demand for meat production will increase in future years.
2. The proposed action or alternative allotment management plans (AMPs) would be implemented over the 8-year period following completion of the final environmental statement (FES).
3. The Bureau of Land Management (BLM) would fund the improvements required to implement the proposed action and do so within the stated timeframe.
4. The necessary manpower would be furnished by and to the Uncompahgre Basin Resource Area (ES area), and rigorous effort would be made to completely carry out the studies and monitoring program recommended in the AMPs.
5. The proposed range improvements would disturb approximately 29,970 acres over the short term (8 years) and approximately 25 acres over the long term (20 years) as shown in Table 3-1.
6. In addition to the improvements described in the proposed action, the following existing improvements would be maintained in serviceable condition:
7. The wild horse herd would be held to a maximum (500 head, ranging from 350 to 500).

TABLE 3-1

EXPECTED ACRES DISTURBED BY PROPOSED RANGE IMPROVEMENTS

Range Improvement	Unit	Total	Acres Disturbed per Unit		Total Acres Disturbed	
			Short-term a/	Long-term b/	Short-term a/	Long-term b/
Fences	Mi.	180	1.0	0.002	180.0	0.4
Boundary Markers	No.	112	0.1	-	11.0	-
Cattleguards	No.	12	0.1	0.004	1.0	0.05
Corrals	No.	1	0.5	0.5	0.5	0.5
Stock Bridges	No.	1	0.1	0.1	0.1	0.1
Stock Trails	Mi.	6	1.5	-	9.0	-
Water Developments:						
Pipelines	Mi.	139	0.2	-	28.0	-
Water Taps	No.	4	0.03	-	0.1	-
Wells	No.	18	0.2	0.2	3.5	3.5
Horizontal Wells	No.	1	0.1	-	0.1	-
Storage Tanks	No.	23	0.2	0.2	4.5	4.5
Catchments	No.	1	1.0	0.5	1.0	0.5
Reservoirs	No.	86	1.0	0.1	86.0	8.5
Springs	No.	29	0.2	0.2	6.0	6.0
Troughs	No.	300	0.1	0.001	30.0	0.3
Vegetation Conversion:						
Chaining & Seeding	Ac.	20,880	1.0	-	20,880.0	-
Interseeding	Ac.	8,665	1.0	-	8,665.0	-
Contour Furrows	Ac.	1,250	0.05	-	65.0	-
TOTALS			29,970.8		24.35	

a/ Short-term means at least 8 years from the present, which covers the period of implementation.

b/ Long-term means at least 20 years after full implementation or 28 years from the present (i.e., 2006).

EXAMPLE 5-7 (Cont.)

TABLE 3-2

SUMMARY OF PROPOSED IMPROVEMENTS, ESTIMATED CONSTRUCTION COSTS, AND ANNUAL MAINTENANCE COSTS

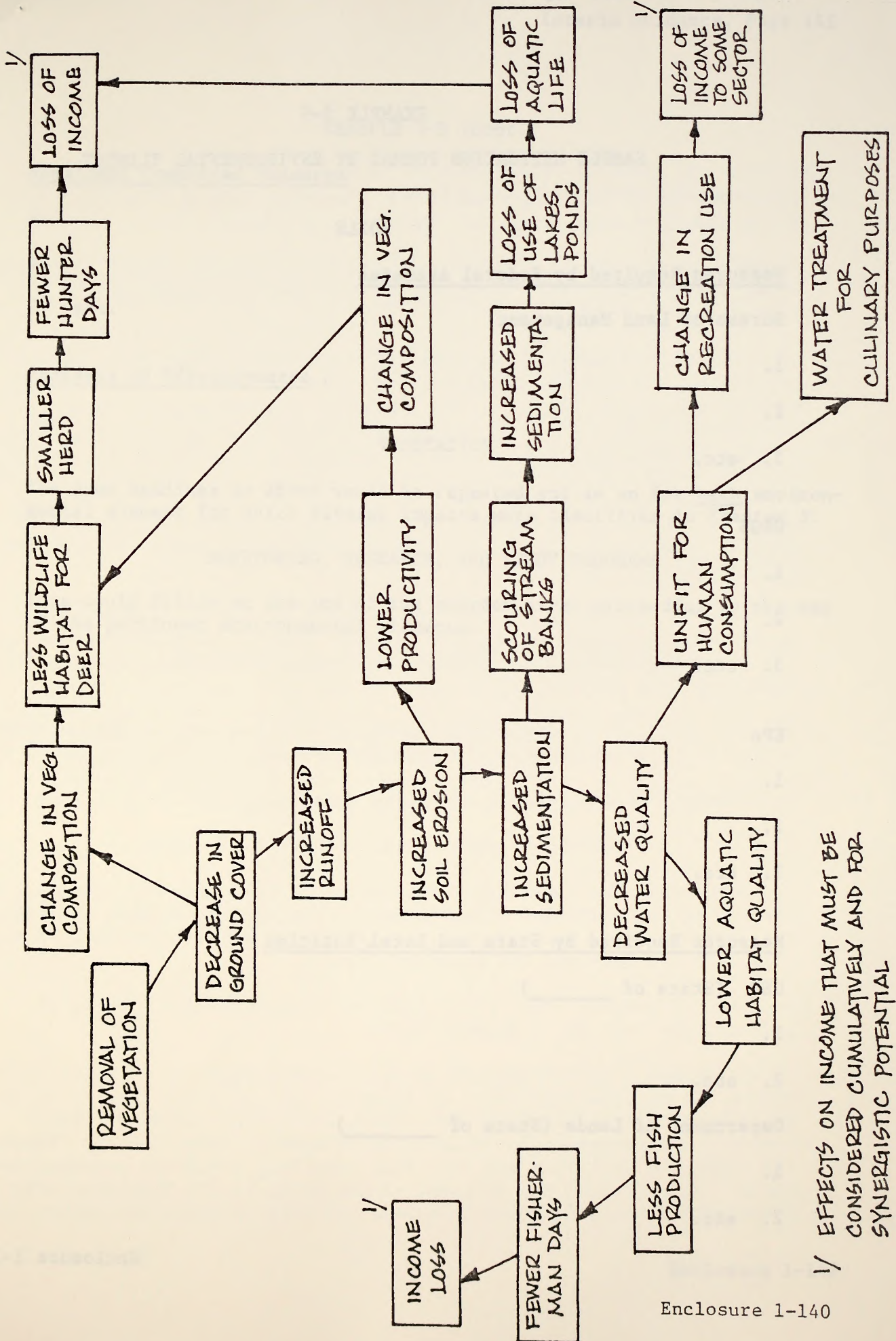
Projects & Vegetation Conversions		No. of Improvements & Estimated Construction Costs by Year of Occurrence a/b/												Maintenance Rate (% of Initial Cost)		Total Annual Maintenance Cost a/			
Unit	No.	Year 1		Year 2		Year 3		Year 4		Year 5		Year 6		Year 7		Total No.	All Years a/ Dollars	Rate (%)	Total Annual Maintenance Cost a/ Dollars
		No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars				
WATER DEVELOPMENTS																			
Wells	No.	10	136,400	5	99,800	-	-	-	4	45,600	-	-	-	-	-	19	281,800	3	8,454
Springs	No.	19	15,200	2	1,600	2	1,600	4	3,200	-	-	-	-	-	-	29	23,200	6	1,392
Catchments	No.	-	-	1	16,000	-	-	-	-	-	-	-	-	-	-	1	16,000	4	640
Reservoirs	No.	24	24,000	21	21,000	18	18,000	16	16,000	4	4,000	3	3,000	-	-	86	86,000	5	4,300
Pipelines	Mi.	39	97,500	33.5	81,750	27	67,500	11	17,500	28.5	69,250	-	-	-	-	139	335,500	10	33,550
Water Taps	No.	-	-	2	2,000	-	-	-	-	2	1,000	-	-	-	-	4	3,000	2	60
Storage Tanks	No.	4	12,000	5	15,000	8	24,000	1	3,000	3	9,000	-	-	-	2	23	67,000	2.5	1,675
Water Troughs	No.	106	21,200	69	13,800	51	10,200	33	6,600	39	7,800	-	-	-	2	300	60,000	10	6,000
FENCES																			
New (wire)	Mi.	1.5	3,600	48	115,200	24.5	58,800	29	69,600	44	106,080	14	31,200	19	45,600	180	430,080	2	8,602
Corrals	No.	-	-	1	2,000	-	-	-	-	-	-	-	-	-	-	1	2,000	5	100
Boundary Markers	No.	23	115	31	155	58	290	-	-	-	-	-	-	-	-	112	560	-	-
OTHER PROJECTS																			
Cattleguards	No.	4	5,600	4	5,800	1	1,400	2	3,000	1	1,600	-	-	-	-	12	17,200	2	334
Trails	Mi.	-	-	-	-	3	2,350	1.55	775	1.45	625	-	-	-	-	6	4,150	2	83
Stock	No.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2,000	5	100
VEGETATION CONVERSIONS																			
Chaining & Seeding	Ac.	3,255	49,140	-	-	800	12,000	3,835	66,700	900	13,500	10,330	143,350	1,760	29,625	20,880	314,315	-	-
Interseeding	Ac.	3,215	39,384	-	-	-	-	825	10,106	400	4,900	2,555	31,311	1,670	20,458	8,665	106,159	-	-
Contours	Ac.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forrows	Ac.	-	-	-	-	-	-	430	10,700	-	-	-	-	820	28,500	1,250	39,200	-	-
TOTALS		404,139	376,105	-	198,540	-	251,181	-	220,755	-	208,861	-	128,583	-	1,788,164	-	65,290	-	-
Income Effects on Local Households c/		80,828	75,221	-	39,708	-	50,236	-	44,151	-	41,772	-	25,717	-	357,631	-	19,587	-	-

a/ All monetary calculations on this table were rounded to the nearest dollar.

b/ Construction of range improvements would be completed by the end of the seventh year after implementation of the proposed action.

c/ Estimated at 20 percent of initial construction costs and 30 percent of maintenance costs.

EXAMPLE 5-8 CAUSE AND EFFECT CHAIN (WEB)
Cause: Grazing Effect: Decrease in ground cover



1/ EFFECTS ON INCOME THAT MUST BE CONSIDERED CUMULATIVELY AND FOR SYNERGISTIC POTENTIAL

EXAMPLE 5-9

SAMPLE MITIGATION FORMAT BY ENVIRONMENTAL ELEMENT

SOILS

Measures Required by Federal Agencies

Bureau of Land Management

- 1.
- 2.
3. etc.

USGS

- 1.
- 2.
3. etc.

EPA

- 1.
- 2.
3. etc.

Measures Required by State and Local Entities

DEQ (State of _____)

- 1.
2. etc.

Department of Lands (State of _____)

- 1.
2. etc.

EXAMPLE 5-9 (Cont.)

Applicant Committed Measures

- 1.
- 2.
3. etc.

Analysis of Effectiveness

VEGETATION

The same headings as above would be repeated and so on for each environmental element for which adverse impacts were identified in Chapter 3.

MONITORING, RESEARCH, AND STUDY PROGRAMS

This would follow at the end of the chapter after proceeding to the end of the pertinent environmental elements.

EXAMPLE 5-10

FORMAT SAMPLE OF MITIGATION BY COMPONENT

Structure by decision component; i.e., Leasing, Mining Plan Approval, Right-of-way Grants, AMPs, and Improvements (fences, etc.).

The structure under each of these would be by federal, state, and local agency; e.g., BLM, USGS, Wyoming DEQ (only BLM for bureau motion proposals).

Only specific, committed measures are identified. They would not be grouped by environmental element, but would be numbered consecutively through the entire chapter. The impact or impacts against which the measure is being applied is identified for each listed measure. Each measure is then analyzed for its effectiveness in reducing the impact and the results of the analysis are quantified. The analysis deals with how effectively these measures have been in the past in this area or areas of similar environment. Any research to support the predicted results, the probability of the measure working as predicted, and the risk of failure is cited.

The next major portion of the chapter would be tabular summaries by environmental element (e.g., Air Quality, Soils). The column headings for the tables would be: Impacts, Mitigating Measure(s), and Impact Reduction (see Example 5-11).

The last section of this chapter identifies and describes the monitoring, research and study programs to be undertaken on the area.

In summary, Chapter 4 would look like this:

RIGHTS-OF-WAY: DAM, RESERVOIR AND TUNNEL

1. Measure: The clearing of vegetation in the reservoir area will be limited to the elevation of 6,010 feet. The vegetation will be clipped and disposed of as mulch in the disturbed area between the high water line of 5,995 feet and the clearing line.

Impact: Permanent loss of 117 acres of vegetation and 75 tons of sediment per year for a 3 year period.

Effectiveness: The vegetation loss will be reduced by 22 acres (from 117 to 95) as less area would be cleared. The sediment loss would be reduced by 15 tons per year (from 75 to 60). This reduction would result from the reduction of 22 acres of cleared area, thereby reducing the amount of disturbed and bare soil area from which the sediment originates. In addition, the disposal of the mulch in the disturbed area above high water line would help hold the soil in place and reduce the

EXAMPLE 5-10 (Cont.)

velocity of rainfall in striking the bare soil, allowing for increased infiltration of water into the soil instead of becoming sediment-bearing runoff.

2. Measure: The applicant will be required to develop and fund a stream improvement program between the south river junction and the north river junction. The stream improvement program will consist of installation of the necessary log weirs, deflector configurations, braided stream sections and random rock placements. See Appendix 1 for detailed examples of such an improvement program.

Impact: Loss of 2 miles of the flowing river and reduction in the standing crop of fish from 64 pounds of naturally reproduced rainbow and brown trout per acre to approximately 21 pounds, and loss of spawning areas in the 2-mile stretch.

Effectiveness: This program will increase aquatic life production, thereby benefiting fish production and increasing recreational opportunities in the canyon. Some measure of the results obtainable by such a program may be seen from research conducted in Wisconsin (Hunt 1971). Figure 4-1 shows the result of habitat development carried out in Lawrence Creek, Wisconsin. Annual biomass was increased 41 percent. Assuming comparable results from a stream improvement program in the South Platte River, 37 pounds of brown trout per acre now estimated for Study Area 3 (Map 2-1 and Table 2-16) could be increased to 52 pounds, the present estimated population for Study Area 1. There would also be a comparable increase in the standing crop of rainbow trout. Since there is no estimate of the present standing crop of rainbow trout for Study Area 3, the improvement cannot be quantified.

SUMMARY TABLE
(See Example 5-11)

MONITORING, RESEARCH AND STUDY PROGRAMS

Specifically describe those which will be carried out. Identify who will carry them out. Describe the details of each program.

EXAMPLE 5-11

SAMPLE OF MITIGATION TABULAR SUMMARY

TERRESTRIAL WILDLIFE

Impacts	Mitigating Measure(s)	Impact Reduction Due to Mitigation
1. Reduction of important sage and blue grouse brooding habitat and other upland bird habitat on approximately 100-200 acres of wet meadows scattered through several allotments as the result of excessive livestock grazing	3	Improvement and protection of about 50 acres of vital upland game bird habitat for brooding and feeding
2. Gradual deterioration of 2,378 acres of crucial bighorn sheep winter range by proposed livestock grazing in the Birch Creek and Wood Creek Pastures of the Garden Creek Allotment	4	Reduction of competition on bighorns by about 80 percent; habitat would improve from fair to good on 2,100 acres
3. Domestic horses grazing Garden Creek Allotment utilize estimated 300 Animal Unit Months (AUMs) of forage needed by deer in winter	5	Reduction of competition on the Garden Creek Allotment by about 25 percent, making an additional 75 AUMs available for deer
4. About 75 miles of proposed fencing would restrict antelope seasonal and daily movements and produce occasional mortality	9	Antelope passage through all 75 miles of proposed fences would occur and all impacts would be reduced by about 85 percent
5. Construction of livestock watering troughs in the vicinity of key browse ranges encourages cattle to utilize shrubs in late summer and fall on 300 acres	29	Adverse use of big game winter ranges would be reduced by about 10 percent, reducing impact by 200 acres

EXAMPLE 5-11 (Cont.)

Impacts	Mitigating Measure(s)	Reduction Due to Mitigation
6. Development of 54 springs for livestock could greatly reduce quality of grouse brooding areas and succulent forage needed by many small animals and birds if water were not retained at the original sources	30	Reduction of impact on wildlife by about 80 percent

EXAMPLE 5-12

PARTIAL SAMPLE OF CHAPTER 6

Chapter 6 discusses the productivity of the environment which would be affected by the construction and/or operation of the proposed Foothills Project. In this context, "short term" refers to the 3-year construction period which would be required to construct the components of the Foothills Project and "long term" refers to the estimated 75-year project life. Beyond 75 years, the dam and reservoir would probably continue to affect productivity since the removal of this structure would be of questionable practicality. It is assumed that other above-ground, permanent facilities would be removed and partially salvaged and the affected acres reclaimed.

In total, about 554 acres of land in a naturally productive state would be disturbed during construction, of which 76 acres would be occupied by manmade buildings, roads, trails, and structures, and 95 acres would be transformed from stream aquatic and terrestrial habitat to reservoir aquatic habitat. Uses on the remaining 383 acres would be modified temporarily or disturbed by short-term construction-related activities.

The short-term uses on the 383 acres would reduce natural productivity during construction and a 3- to 5-year restoration period. During this time about 447 tons of natural biological production would be lost. Long-term annual production thereafter would be unaffected. The occupation of 76 acres by structures would eliminate natural productivity and result in a long-term net loss of 2,360 tons of biomass.

Filling of the proposed reservoir would inundate 95 acres of terrestrial habitat and replace it with a relatively sterile aquatic habitat. Although the present fish production per acre would be reduced, total fish production of 896 pounds in the 1.7 miles of stream inundated would be increased approximately two-fold - to 1,995 pounds - in the 95-acre reservoir. All terrestrial biomass, estimated at 4,000 tons, would be lost during the 75-year project life, and since the dam would remain afterwards, it would continue to reduce biotic production by about 42 tons annually thereafter. Additionally, natural trout reproduction in the 1.7 miles of stream inundated would be lost entirely and not replaced by the reservoir. The short-term construction uses in the Platte Canyon would affect long-term land uses on 117 acres (to high-water line) by eliminating most land use options in the future. However, casual land uses such as recreational and wildlife use would continue.

EXAMPLE 5-12 (Cont.)

TABLE 6-3

POTENTIAL RECLAMATION SUCCESS

RECLAMATION SUCCESS <u>Potential</u>	ROUTES - ACREAGE		
	<u>Primary Proposal</u>	<u>Northern Route</u>	<u>Ariz. Strip</u>
Less than 20%	5,306	4,957	6,253
20 - 50%	1,769	1,652	2,084
Greater than 50%	295	276	384

As can be seen from this table, approximately 72 percent of the disturbed area of each proposal has only a reclamation success potential of less than one chance in five in any one year. Each unsuccessful reclamation attempt lengthens the time it would require to return to current productive levels.

Reduced vegetative productivity along the transmission lines could outlast the projected life of the basic project facilities. Vegetative loss and reduced productivity would affect production of various living organisms as a trade-off for electrical energy production.

EXAMPLE 5-13

SAMPLE OF SUMMARY OF CHAPTER 8

Estimated condition of wildlife habitat for various game species in the Challis Planning Unit in 15 years without the proposal and relative improvement or deterioration of the habitat that would be expected to occur under the various alternatives.

		In 15 Years		ALTERNATIVES						
Game Species	Present Status	With Proposal	Alt. 1		Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7
			No Action							
Deer										
Winter range										
Poor	25,111	-4,222	+6,198	- 6,833	+7,498	- 4,222	-11,272	-5,005	-5,527	
Fair	25,992	+ 24	-5,010	+ 1,335	-6,215	+ 24	+ 56	+ 27	+ 29	
Good	1,885	+5,198	- 188	+ 6,498	- 283	+ 5,198	+12,216	+5,978	+6,398	
Elk										
Winter range										
Poor	228	- 46	+ 181	- 101	+ 231	- 46	- 50	- 46	- 57	
Fair	1,206	- 195	- 127	- 362	- 190	- 422	- 215	- 195	- 243	
Good	543	+ 241	- 54	+ 362	- 91	+ 468	+ 265	+ 241	+ 300	
Antelope										
Yearlong range										
Poor	22,105	-5,226	+2,065	-11,052	+6,381	-13,013	- 7,737	-7,737	-6,631	
Fair	25,323	- 805	-4,195	- 4,142	-5,117	- 965	- 1,126	-1,126	- 966	
Good	8,694	+6,331	- 869	+ 6,306	+1,304	+ 7,597	+ 8,863	+8,863	+7,597	
Summer range										
Poor	6,272	-1,568	+2,011	- 3,136	+2,692	- 1,953	- 2,195	-2,195	-1,882	
Fair	13,403	-1,779	-1,313	- 4,904	-1,637	- 2,136	- 2,493	-2,493	-2,135	
Good	6,932	+3,352	- 693	+ 8,045	-1,040	+ 4,022	+ 4,693	+4,693	+4,022	
Bighorn sheep										
Winter range										
Poor	3,005	-1,082	+1,157	- 1,403	+1,348	- 1,242	- 1,306	-1,082	- 120	
Fair	3,807	- 229	- 926	- 292	-1,112	- 260	- 273	- 229	- 43	
Good	107	+1,531	- 11	+ 1,915	- 16	+ 1,722	+ 1,799	+1,531	+ 383	

EXAMPLE 5-13 (Cont.)

TABLE II-I

COMPARISON OF IMPACTS FOR MAJOR ALTERNATIVES

	Proposed Action	No Action	Upstream Alternatives	Chatfield Alternatives
Soils				
Sediment yield for project life	+1,752.6 tons	No change	+1,793 tons	+1,175 tons
Terrestrial Habitat				
Vegetation permanently lost	171 acres	No change	75 acres	65 acres
Vegetation temporarily lost (3-5 years)	388 acres	No change	389 acres	313 acres
Type of Bighorn habitat lost during construction	Summer range Winter range Lambing grounds Breeding areas	No change	Summer range	No change
Reduction on Bighorn population	-50	No change	-50	No change
Increased feeding area for peregrine falcon	+98 acres	No change	+ 8 acres	No change
Eagle eyries disturbed	One eyrie	None	Two eyries	No change
Loss of habitat for other species in miles of canyon bottom	4 miles	No change	8 miles	No change
Climate and air quality	Air quality in the construction area will be degraded by dust and vehicle emissions in amounts too small to measure	No change	Same as proposed action	Same as proposed action

EXAMPLE 5-14

SAMPLE OF CHAPTER 9 SHOWING RESULTS OF CONSULTATION

1. U.S. Environmental Protection Agency
Mr. John A. Green, Regional Administrator
Region VIII, Denver, Colorado

Comments: The EPA expressed its belief that the statement should show the interrelationships of this project with the upstream water development alternatives presently being considered by the Bureau of Reclamation. The EPA also suggested the possibility of reducing water consumption through pricing, reuse, and conservation.

Further, the EPA indicated the possibility of downstream and regional impacts, particularly as these may affect the EPA's efforts to clean up both air and water in the Denver region. Lastly, the EPA suggested the statement consider the impact of the proposed project upon the environmental and planning objectives established for the Denver region.

2. Federal Power Commission
Mr. Donald L. Martin
Regional Engineer, Fort Worth, Texas

Comments: Comments were based primarily on a review of a partial Preliminary Field Draft and centered around FPC authority and responsibility relative to federal power projects. The comments included a draft revision on their action included in Chapter 1.

3. U.S. Forest Service
Mr. Robert N. Ridings
Forest Supervisor
Pike-San Isabel National Forests

Comments: In addition to the environmental analysis previously mentioned, information relating to uses on national forest land was provided. The USFS also reviewed a complete copy of the Preliminary . . .

EXAMPLE 5-15

SAMPLE OF TABULAR SUMMATION FOR CONSULTATION AND COORDINATION

Federal Contacts

The following list reflects the number and extent of federal contacts initiated and actions completed in preparation of the draft statement. The comments received from the federal agency contacts were considered in preparation of the statement.

Agency	Nature of Contact	Response Received	Action Taken
U.S. Forest Service	Request staff and data assistance; compliance with Sikes Act	Yes	Provided one staff member and data assistance
U.S. Geological Survey	Request staff and data assistance	Yes	Provided one staff member and data assistance
National Park Service	Request staff assistance, statement of interest, and data assistance	Yes	Unable to provide staff member; provided assistance and guidance
Federal Energy Administration	Request statement of interest and data assistance	Yes	Provided full assistance as requested
Federal Power Commission	Request statement of interest and data assistance	Yes	Jurisdictional concerns were satisfied; comments provided
Bureau of Reclamation	Request staff and data assistance	Yes	Provided one staff member and data assistance
U.S. Corps of Engineers	Request statement of interest under Section 404, Federal Water Pollution Control Act; Rivers and Harbors Act of 1899 (Sec. 10)	Yes	Jurisdictional concerns were satisfied

EXAMPLE 5-16

Letter #19

SAMPLE OF MARK-UP OF A COMMENT LETTER

Lambert #4 { Impacts resulting from the gradual slowdown and eventual termination of the proposed action need to be considered more fully in the final statement. This is necessary in order to determine whether the short-term uses proposed are consistent with the long-term productivity of any recreation resources affected by the proposed action. It is also crucial in determining whether measures taken to mitigate the increased demand for recreation will be short-term or long-term commitments of recreation resources.

Analysis of Proposed Mining and Reclamation by Atlantic Richfield Company, Carter Oil, Kerr-McGee, and Wyodak Companies (Volumes III & IV), Parts III, IV, V, and VI.

Lambert #5 { Present use patterns on all leases and their adjacent areas will be altered. Also, recreational access to these sites will be greatly improved. Considering these two facts, a change in type of use would probably occur on these areas (e.g., hunting to ORV use). Although net use will probably increase only slightly, some attempt should be made to determine the uses which will become most popular in the future.

Lambert #6 { The major activity to be impacted significantly by this proposal would be hunting on the Carter Oil lease north of Gillette. We note on page IV-119 that access restrictions to the area will be imposed by 1990. The types of restrictions and the resulting impacts these may have on hunting should be explored in the statement.

USFS #7 { The leases granted to Kerr-McGee and Arco are located in the same township. The cumulative impacts of these two leases on the surrounding area should be treated in the statement. Also the draft should specify the distance at which noise impacts would be damaging or annoying to recreational activities and wildlife.

USFS #8 { In discussing the Arco lease on page III-88, under Description of the Existing Environment, recreation is discussed thusly, "Recreation can best be described as people doing things for their physical or psychological well-being. There are few activities that occur on this lease area that serve these needs." We find the definition so broad as to be basically inaccurate. Conceivably one might undergo surgery or undertake psychoanalysis for his "physical or psychological well-being." Overall, we regard the two sentence discussion as inadequate and possibly inaccurate in view of the facts presented on page III-118, under "Probable Impact of Proposed Action." It is indicated that mining will eliminate approximately 500 acres of hunting area and the 100-acre Reno Reservoir on a leasehold which is described as "virtually without recreation resources."

EXAMPLE 5-17

SAMPLE OF A MARK-UP OF A HEARING TRANSCRIPT

I visited the Amax Mine the other night, and the antelope didn't seem to be bothered at all by the activity there. I recognize some loss of deer habitat. I think, that part of it is very accurate, but it doesn't seem to me that there's any real threat to the antelope population.

Miller
#53 { Now, the Report refers to a five-year lag time in rehabilitation of the land. We think that's an outside figure. Some of the rehabilitation already going on is done is less than that. Three years is more realistic. In any event, we see this is a one-time lag and if there's a continuous mining operation, that five-year lag only happens once. It doesn't happen every year with every allotment of coal mine.

Let me say in conclusion that I don't take second place to anyone in love for this state, anyone. I love its environment. I love the great wide open spaces, the physical attributes of this state. I've seen this state when it was very poor, when revenue was not available to meet human needs. And I suppose, if we hadn't planted the first row of corn or hadn't engaged in free enterprise somewhere in this country, none of us would be here today. We do indeed have plenty of wind in Wyoming, and if we have inversions, they're for a very short period of time.

Lipscomb
#54 { I think the report fails to recognize, when it predicts pollutants from coal conversion plants and powerplants, fails to recognize that we do have both State and Federal standards which have to be met.

Obviously, legal action can be taken if they're not met. The statements of the pollutants, the sulfur dioxide and the particulates, put into the air, I do not think recognizes the role of the standards that we already have.

Welch { With respect to wildlife, there's a statement that 300 elk probably would be lost. I am advised that this herd of elk at Fortification between Johnson and Campbell Counties is approximately 30 to 35 miles from any Federal Coal Lease. It seems a little hard to believe that with no mining activity in that area, that the elk would be lost. In any event, the statements on wildlife, I think, fail to recognize the excellent game and fish management both by the State and the Federal Government that has existed and has made us one of the premier states of the nation in big game. We do, indeed, have more elk in this state than we've ever had. We have more antelope than we've ever had. The deer population is down a little because . . .

EXAMPLE 5-18

SAMPLE COMMENT RESPONSE LETTER

ES Team
P.O. Box 1828
Cheyenne, Wyoming 82001

August 5, 1974

Mr. T. A. Phillips
Chief, Bureau of Power
Federal Power Commission
Washington, D.C. 20426

Dear Mr. Phillips:

We wish to acknowledge receipt of your comments on the draft Environmental Statement on Development of Coal Resources in the Eastern Powder River Basin in Wyoming.

All comments will be considered in the preparation of the final Environmental Statement which will be completed and forwarded to the Secretary of the Interior in September.

Your interest and concern are greatly appreciated.

Sincerely yours,

Enclosure 1-155

EXAMPLE 5-19

SAMPLE COMMENTS AND RESPONSE FORM

Letter Control No. _____

Responsible Analyst _____

Comment Control No. _____

Response due by _____

COMMENTS AND RESPONSE FORM

(one comment and corresponding
response to each sheet)

COMMENT (complete and verbatim - cut & paste from letter or transcript)

RESPONSE (thorough and precise) (Attach text change if one is required.)
